



02

KJETIL SKOGRAND (ed.)

Emerging from the Frost

Security in the 21st century Arctic

OSLO FILES

ON DEFENCE AND SECURITY— 02/2008

INSTITUTT FOR FORSVARSSTUDIER (IFS)

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SUMMARY

On 25–26 September 2007 the Norwegian Institute for Defence Studies hosted an international conference on the security politics of the Arctic region. This issue of *Oslo Files* contains a collection of contributions from the conference. The anthology comes in four parts.

After a brief introduction, the scene is set with a discussion of the various aspects of the geopolitical developments in the High North after the Cold War. Part two follows with three national perspectives on developments in the Arctic: the Norwegian, the Icelandic and that of the United States. The third and most extensive part presents research and practice within the areas of jurisdiction, transport, resources and security in the High North.

Finally, General Sverre Diesen, the Norwegian Chief of Defence and initiator of the conference, presents his perspectives on military implications for the Arctic – now emerging from the frost.



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INTRODUCTION

The Arctic region used to be marked by rivalry between the two Cold War blocs. After 1990, the region experienced a thaw, both politically and climatically, and the countries of the region gradually rediscovered earlier patterns of cross-border cooperation. Today, the region is about to take on new significance. High energy prices and technological advances have made it possible to exploit petroleum resources in hitherto inaccessible areas, and the melting of the polar ice cap could open new maritime transportation routes. At the same time, the region contains some of the world's richest fishing resources. Environmental experts fear the effects of both petroleum drilling and growing maritime traffic in a vulnerable area.

There are still a number of unresolved sovereignty issues in the Arctic. Several delimitation lines between maritime zones remain undecided. The northernmost extension of the continental shelves has not yet been settled and some observers talk of a race towards the North Pole. There are also unresolved issues of sovereign rights pertaining to the regulation of fisheries. The Norwegian Fishery Protection Zone around the Spitsbergen archipelago has remained controversial. Even in areas where sovereign rights are well established, the littoral states are faced with extensive illegal, unreported and unregulated and fishing (IUU).

Although the military tension of the Cold War area belongs to the past, the area does pose security challenges. It contains some of the most important military bases of the Russian Federation, which has become more self-assertive and forward-leaning. Norway and Canada have recently placed new emphasis on military presence in the High North. Iceland faces new challenges due to the US decision to close down the bases there.

All these challenges formed the background for an international conference held in Tromsø, Norway, 25–26 September 2007. More than 200 participants from all of the states bordering on the Arctic met to discuss recent developments in the region with an emphasis on security issues. The contributors included politicians, civil servants, scholars and military commanders.

The conference was initiated by the Norwegian Chief of Defence, General Sverre Diesen, and organized by the Norwegian Institute for Defence Studies. Senior Fellow Dr Kjetil Skogrand was responsible for organizing the conference together with Research Fellow Lene Kristoffersen. People from my own institute and from the secretariat of the Norwegian Chief of Defence rendered valuable support in the practical organization of the venue. I would like to thank all of them for a most successful conference.

This volume contains some of the contributions from the conference. In some cases they have been revised and updated to take account of recent developments. Let me thank Senior Fellow, Dr Paal Sigurd Hilde, and Anna Therese Klingstedt, editor of our publications, for reviewing the papers and deciding the style of the final anthology.

I hope that the contributions will serve as a useful update of the present challenges in the Arctic, seen from an international security perspective.

Oslo, May 2008

Rolf Tamnes

Professor

Director of the Norwegian Institute for Defence Studies

Part I: Setting the scene

THE ARCTIC IN A GEO-STRATEGIC PERSPECTIVE

by Dr Kjetil Skogrand, Senior Fellow, Norwegian Institute for Defence Studies

In this article I shall discuss challenges in the Arctic Region in our time with an emphasis on security. Perhaps I should start by defining what region I am dealing with. I shall discuss the circumpolar region, the region surrounding the North Pole. But how far south should we go? If we take the weather charts of an average television network in the United States or in Continental Europe as a starting point, I shall be concerned with the areas *above* the northern limits of such charts. This would leave us roughly with Northern Scandinavia, Northern Russia, Alaska, Northern Canada, Greenland and Iceland, the seas surrounding these areas and the Arctic Basin itself.

PERSPECTIVES FROM THE COLD WAR

During the Cold War, the Arctic had a strategic value as a transit area between the heartlands of the two superpowers. The shortest distance for missiles or strategic bombers went across the Arctic. Northern waters were also the operating area for large naval forces and surface ships, some of them bearing nuclear weapons, patrolled regularly. Hidden under the surface were strategic submarines. Moreover, strategic transport routes between the United States and Europe went across the North Atlantic. The region was an important area for intelligence collection and early warning. Numerous radar stations and installations for signals intelligence were located in the region. Security in a military sense was the dominating feature of the Arctic during the Cold War. The region was frozen, not only climatically, but politically.

During the Cold War, the area was not unimportant in terms of resources. Indeed, Arctic waters have been important fishing grounds for centuries. From the 1970s factory trawlers grew in number, with the result that Arctic fish stocks were placed under increasing pressure. Fishery issues cut across the Cold War divide and it even proved impossible to prevent several harsh fisheries conflicts between Western bloc countries. On a more positive note, Russia and Norway were able to establish a successful system for negotiating quotas through the Joint Russian-Norwegian Fisheries Commission in the mid-1970s.

It was also well known during the Cold War that the seabed in the Arctic could contain hydrocarbons. However, only in Prudhoe Bay, Alaska were offshore installations established, and this took place only towards the end of the Cold War. In the rest of the Arctic, costs and technological challenges made exploiting offshore resources unfeasible. From a geo-strategic perspective, however, resources played a rather limited role in the Arctic during the Cold War.

ENERGY

Today, the picture is very different. Resources, primarily oil and gas, are the main drivers of the region in a geo-strategic sense. Energy has re-emerged as a major issue in international politics. Economic growth in Asia, particularly in India and China, has contributed to a growing demand of fossil fuels. Attempts to develop other energy forms cannot prevent hydrocarbons from remaining the dominant source of energy for the next generation.

Energy security has become a new catchphrase in industrial economies. Partly this is about securing stable and predictable supplies of hydrocarbons. For some countries, this has led to a quest for diversification – buying oil and gas from several producers instead of relying on one major supplier, or on suppliers from one region only. Another increasingly important aspect of energy security is the physical security of installations: platforms, harbours, refineries and pipelines. Such infrastructure is vulnerable to terrorist attacks – the scourge of our time. Issues related to energy security are currently being discussed in NATO.

One reason for the concerns of net importers is that the majority of the known reserves of hydrocarbons are to be found in politically unstable regions – notably the Middle East. There are probably substantial reserves of hydrocarbons in the Arctic. In the European Arctic, there are huge fields in the Barents Sea (Snow White, Shtokman), as well as in the Pechora and Kara seas. High energy prices and technological advances make it possible to exploit these fields.

The Arctic is politically stable, surrounded by states with robust governmental systems and there are relatively harmonious relations between these states. Even the most difficult unsolved questions in the Arctic pale compared to the formidable challenges facing other oil-rich regions in the world. This is why the Arctic now stands out as one of the most attractive energy provinces in a global context.

There is of course one country in the region where the jury is still out when it comes to stability and predictability – Russia. Socially and politically, Russia is more stable than at any time since the fall of the Soviet Union. The political chaos of the Yeltsin years is history and the economy is robust with a high growth rate due to high energy prices. In sum, the economic and political recovery of Russia is nothing less than remarkable but there are also many sources of concern. The government displays authoritarian tendencies and deficiencies in

terms of human rights and freedom of speech. The legal system is selective and inadequate, also in the commercial field. In the Russian energy sector there is a new emphasis on national control. Foreign investments are not secure, as the Sakhalin case has demonstrated.

Another source of concern is Russia's renewed self-assertiveness in pursuing its national interests. True, no one should be surprised that the Russians are spending some of their growing revenues on rebuilding their armed forces after years of decay. No one should be shocked because Russia is once again presenting its views more clearly on the international stage. But it is more troubling that Russia seems to be using energy as a means to exert foreign-policy pressure. Thus, to some countries, particularly in Eastern Europe, energy security is primarily about avoiding too much reliance on Russian energy supplies.

FISHERIES

Although hardly a resource of primary geo-strategic importance, the total value of Arctic fishing is greater than many people realize. Approximately ten per cent of the world's catch of white fish is harvested in the Arctic, and the overall value amounts to several billion US dollars. And the potential for conflict over fisheries issues should not be underestimated. Several Arctic states have demonstrated their willingness to use coercive measures to ensure that fisheries regulations are respected.

Uncontrolled, unregulated and illegal fishing is a major challenge. Estimates have indicated that 100,000 tonnes of fish is illegally caught annually in the Barents Sea alone. That amounts to a quarter of the total catch permitted. Illegal fishing could lead to fish stocks being overexploited and severely depleted, with the result that legal fishing may have to be reduced or even stopped. This would deprive many of the region's coastal populations of their livelihood.

During the last year or so, there have been positive reports that illegal fishing on the European side of the Arctic is being reduced due to more effective control and cooperation. Cooperation between Norway and Russia has been strengthened. Around the North East Atlantic Sea Basin a system for checking the landing of all frozen fish is being introduced. Despite this, overfishing remains a serious challenge.

CLIMATE CHANGE

Reports such as the Arctic Climate Impact Assessment and that from UN International Panel on Climate Change have shown that the climate in the Arctic is changing much faster than in other parts of the world. Not only in a political sense is the region emerging from the frost. What impact might climate change have on international relations in the Arctic in the decades to come? There are a

number of reasons why climate change will add to the geo-strategic complexity of the region.

First, new transport routes might be opened, initially only during the summer season, then possibly throughout the year. Admittedly, the possibilities for trans-Arctic shipping in the future are highly uncertain, but the ice seems to be melting faster than previously assumed. Some routes that are inaccessible today might be opened in our lifetime. If new sea transportation routes can be utilized, this will give rise to a number of challenges pertaining to jurisdiction, regulation and security etc.

Second, it might become easier, and thus more economically feasible, to exploit energy and mineral resources in Arctic areas that have so far been inaccessible. This will place remaining jurisdictional conflicts in a new perspective.

Third, fish stocks might start to migrate even faster than today. Moreover, new areas might open up for fishing as the sea-ice retreats. Even at present, the negotiations of quotas between states are rather complicated. Dramatic shifts in the distribution of major fish stocks will no doubt add to these difficulties.

Other environmental issues might also move higher up on the regional agenda in the coming years. The establishment of new offshore installations and the growing number of oil tankers increase the risk of accidents. The territory of neighbouring countries can be affected – pollution knows no borders. Thus, the issue of international regulations and environmental standards can be expected to become more important. Norway has initiated a dialogue with Russia on common environmental standards for the Barents Sea.

The aim of such standards should not be to prohibit legitimate economic activity. Rather, the intention should be to ensure sustainability: fisheries, tourism, the oil and gas industry and sea transportation should be able to coexist without threatening one another. Surveillance, search and rescue capabilities and protective measures in the event of oil spills are obvious areas for cooperation between the Arctic neighbours.

JURISDICTION

There are several unsolved issues of jurisdiction in the Arctic: some delimitation lines between maritime zones remain undecided and the sovereignty of one small island has not been clarified. The northernmost extension of the continental shelves is being assessed by a commission of experts, based on data provided by the countries surrounding the Arctic Basin. This will probably lead to the need for further negotiations about delimitation. Another issue on the European side of the Arctic is the interpretation of the Spitzbergen Treaty regarding both the status of the fisheries protection zone and the status of the seabed off the coast of the islands. Then we have the legal challenges posed by possible new sea transportation routes.

It could be useful to remind ourselves that conflicting sovereignty claims are by no means unknown in other parts of the world, including areas with oil and gas resources. In some of these areas of contested territorial claims, relations between the neighbouring states are somewhat more strained than in the Arctic Region – consider, for instance, the Middle East, the Caspian Region or the South China Sea.

Seen from this perspective, if it is possible to resolve territorial disputes in an orderly manner anywhere in the world, it should be in the Arctic. It is in fact slightly embarrassing that such agreements have proven so difficult to reach. A heavy responsibility lies with the Arctic states: how are we to be seen as promoting world order and global stability if we are not able to agree amongst ourselves on issues that, on the whole, seem rather less complicated than those of other regions? When it comes to overlapping claims, the region obviously needs less flag-waving and more wise statesmanship.

SECURITY

This brings me to the final issue – the significance of military force in the Arctic today. When the Cold War ended almost two decades ago, the Arctic quickly lost much of its former status as an area of high geo-strategic significance in a military sense. Russia's military capacity was decimated. NATO's detailed emergency plans and reinforcement schemes for the European High North fell into oblivion.

Nonetheless, some of the traits from distant times are still relevant. The Kola Peninsula has remained an important base area for Russian forces, including its nuclear deterrent. The Arctic region has also remained the operating area of nuclear submarines from other countries. They may be fewer, they may be primarily of symbolic value and we may not see them, but they are still there. Some issues from the Cold War have reappeared, but in a different way. The Arctic is one of the possible transit regions for missiles launched from sites in other parts of the world, such as the Middle East or North Korea. The planned missile defence system of the United States will cover the Arctic, and there will be installations for instance on Greenland.

New security challenges have gained importance. The rise of international terrorism has made it necessary to strengthen the protection of commercial infrastructure of strategic importance. Such installations, particularly those at sea, need robust protection that only military forces can provide.

Then there is the issue of surveillance. There is still a need to be constantly updated on the activities in the huge areas in the North. The military sector supplies most of the intelligence data by satellites, radar stations, naval vessels on patrol and maritime surveillance aircraft. The original intention of intelligence and surveillance in the Arctic during the Cold War was of course to keep an eye

on the military activities of the other states in the region. This is still important. However, the expansion of civilian activities in the region has increased the need for surveillance. An updated surveillance picture is needed to counter illegal fishing, detect ships in trouble, follow drifting oil slicks and conduct search and rescue operations.

Lately, the Arctic has attracted more interest in a geo-strategic sense due to reasons that I have discussed in this presentation. There seems to be a growing interest among the Arctic states to underscore their strategic interests in the region through a military presence. One reason is that a military presence still serves as a symbol of sovereignty or jurisdiction. The Arctic states will patrol their maritime zones to demonstrate their willingness to exercise their sovereign rights, and deter anyone who might want to challenge those rights. Possible episodes can then be handled quickly before they escalate. Another reason is that the growing volume of sea traffic in the Arctic and the problem of illegal fishing demand a greater law-enforcement capacity and search and rescue capabilities. Such duties are often performed by naval and coast guard units – the latter are an integral part of the navy in some Arctic countries. The growing sea traffic is one of the reasons why Iceland has voiced concern over the withdrawal of the US aircraft stationed on the island.

It would, however, be an exaggeration to claim that the Arctic is once again becoming a military focal point. The United States retains a substantial military presence in Alaska, but current US military activities in the Arctic are still very modest compared to during the Cold War, particularly in the Arctic areas bordering on Europe. Canada and Norway have both signalled that their northern regions will be given more attention in military terms.

More importantly, Russia is about to expand its military activities in the Arctic. The region now serves as a showroom of Russia's rebuilt military strength. Thus, Russia has recently taken up Arctic exercise patterns associated with the past – such as long distance flights with strategic bombers. Moreover, northern waters, particularly the Barents and White seas, are important testing grounds for Russian maritime weapons systems.

This by no means indicates that a new Cold War is about to start in the Arctic. The expanded Russian activity should instead be viewed as a sign of normalization. We had grown used to a Russia that no longer possessed the means to project military power in the form of large-scale exercises. Now we have to learn how to live with a strong and assertive Russia with a larger military capacity.

However, there is still reason to believe that the growing Russian presence will have implications for the level of activity in the region of the other Arctic nations – at least when it comes to intelligence and surveillance. It will also be interesting to see whether the Russian activities will lead to greater attention on

the Arctic in NATO when it comes to contingency planning in relation to crisis management in the region. Today the Arctic is hardly on the agenda at all in the Alliance.

A somewhat expanded level of military attention in the region compared to the last decade does not have to lead to a higher level of tension, let alone conflict. The states bordering on the Arctic need no explanation for why they have military forces in the region – this is our neighbourhood. At the same time, all parties should acknowledge that there is no reason to militarize the Arctic further. There are no issues in the Arctic that can be solved by showing off force. It should also be remembered that military forces can also serve as a tool for confidence building and cooperation through visits, common exercises and joint patrolling. We have seen some examples of this, for instance between Norway and Russia. There could be a lot more.

CONCLUDING REMARKS

In this presentation, I have described how the geo-strategic significance of the Arctic has changed since the Cold War. The region used to be strategically important due to its location between the two Cold War blocs. Today the region is characterized by new opportunities due to the increased potential for extracting hydrocarbons. This forms the background for an increased geo-strategic interest in the region.

Let me conclude by emphasizing the need for stronger multilateral cooperation in the Arctic region. New legal frameworks should be negotiated to tackle an expansion in sea transportation. Common environmental standards are needed to deal with an expansion in oil and gas installations. Relevant information on civilian activities from surveillance systems should be exchanged and search and rescue capabilities coordinated. The fight against illegal, unregulated fishing also requires close contact between Arctic neighbours. Only by finding common solutions can the great potential of the Arctic be released.

The Arctic region



Fig. 1: Map showing the Arctic region defined as the area where the average temperature for the warmest month is below 10°C.

Part II

National perspectives on the Arctic

ARCTIC CHALLENGES – THE FINE ART OF DEALING WITH CHANGE

by Anne-Grete Strøm-Erichsen, Norwegian Minister of Defence

The top of the world deserves to be where we have placed it: at the top of the political agenda. The Government has, as some of you hopefully are aware, made the High North's challenges and opportunities our top priority. I have been asked to discuss the challenges we face in the High North. Let me introduce this landscape by citing a few lines by the Norwegian poet Rolf Jacobsen. His gripping poem *North* has not only acquired the status of an unofficial regional anthem on this side of the Arctic Circle, it has also become a literary point of reference for what lies ahead. And this is Rolf Jacobsen's advice, as he points out the direction for us.

Walk into the wind. Climb mountains.
Look to the north.
More often.
This country is long.
Most of it is north.

Most of Norway is north. And I would argue that the present government is convincingly doing exactly what Rolf Jacobsen encouraged: we are looking more often to the north. As a matter of fact, we are not only looking more often to the north, we are talking more about the north, we are travelling more in the north and, most importantly: we are doing more in the north.

For people living further south, I would presume that the natural question to ask is why. Why have we moved the High North centre-stage and made it a strategic priority? The answer is, in one word, change. And hence, this is the challenge we have embarked on: the fine art of dealing with change in the High North.



Fig. 2: Norway and the maritime boundaries in the High North.

CHANGES IN THE HIGH NORTH

I would like to point out three areas where we are observing changes with far-reaching consequences: energy, climate and security policy.

First, let me address an area which has become one of the main driving forces behind the changes we are witnessing in the High North: energy.

Oil and gas are already produced in the Barents Sea and the Pechora Sea. In a world where energy supply and energy security are becoming important security policy issues, it is not surprising to see growing interest in the High North as an emerging energy province.

According to the US Geological Survey, as much as a quarter of the world's undiscovered oil and gas resources may be located in the Arctic. In a comparative perspective one might argue that energy has replaced strategic nuclear deterrence as the main source of interest in this region.

We have turned a new page: the first tankers filled with liquefied natural gas from the Snow White field – the world's northernmost LNG project – have left the processing plant outside Hammerfest.

Discoveries of new oil and gas reserves are opening up new future perspectives for the entire circumpolar Arctic. The strategic importance of the High North will increase. And there will be business opportunities for all of us. This is all well and good. Good business. More energy. Nice neighbours. New perspectives.

This leads me, however, to the second fundamental change we are observing in the High North, and that is a development we witness with dismay. I am of course thinking of climate change. It seems that we human beings have to see something before we believe in it. Friends of the High North, we are seeing it now, the shocking rate at which the Arctic ice is melting. In May 2006 I had, for the first time, the opportunity to see a polar bear in the wild. I had invited my Nordic colleagues to Spitzbergen, and as we were flying above the snow and ice between Longyearbyen and Ny-Ålesund, the sight of a polar bear running beneath attracted our attention. It was a sight of extraordinary natural beauty, one of those once-in-a-lifetime experiences you'll never forget. But at the same time, it was a sight that filled me with worry and contemplation. Where can these beautiful animals thrive and find food when their habitat is being dramatically reduced? In only six days this month, from 3 to 9 September, 180,000 km² of Arctic ice disappeared. That is more than half the size of Norway. It is almost twice the size of Iceland or the Kola Peninsula. In six days.

My point is that as we are trying to mobilize the international community into ways of reducing greenhouse emissions, we must at the same time prepare for the possible consequences of climate change. We must both change our policy and adapt to the consequences. In the High North global warming may provide access to natural resources that until now have been inaccessible. New sea lines will shorten long distance routes considerably. The way we trade with Asia may be significantly altered if hitherto inaccessible routes, such as the Northeast Passage, open to commercial shipping. Canadians now face similar possibilities brought about by the opening of the Northwest Passage, and I am looking forward to hearing the Canadian perspectives on this later on today. Important fisheries might be relocated as the fish move to find their favoured food and temperature. Old inhabitants may have to move. New players will perhaps enter the field. New partners will emerge. Exciting opportunities will present themselves. Yet competition and potential conflicts may be lurking in a future that is suddenly not that distant any longer.

I shall now turn from energy and climate issues to security and defence policy. For these Norwegian policy fields, the changing political scene both internationally and locally in the Arctic acts as a compass.

A predictable security policy framework will be of paramount strategic importance as we:

1. face potential new trade routes that may alter the way we do business with the East;
2. witness dire climate changes that affect everything we know; and
3. watch Norway's largest neighbour change before our eyes.

These issues concern both the individual states that border on the Northern seas, as well as our international partners, including NATO and the UN. As the ice melts and poses dilemmas we cannot ignore, our ability to deal effectively with change and formulate a security policy that firmly draws up guidelines that embody both opportunities and challenges, will be crucial.

As far as Russia is concerned, the end of the Cold War may by now be perceived as a cliché by some, a worn-out phrase. Perhaps we should more aptly talk about the end of "the end of the Cold War". Regardless of perceptions, our relation with Russia and our past history remain issues we cannot ignore. Norway and Russia have lived in peace for a thousand years. In this new era, we are rediscovering patterns of trade and relations that date back centuries.

Norwegians again travel, do business and marry on the Russian side, and vice versa. In 1990, around 3,000 people crossed the border close to Kirkenes. Now that number has climbed above 100,000. The figures tell their own stories of increased relations and contact. And these are good news. We want the Norwegian-Russian border to be a bridge, not a barrier.

If we look at the security and defence policy, here too the overall picture is one of improved cooperation and new opportunities. Our relationship with Russia is basically good. We remain committed to strengthening our partnership with Russia, both bilaterally and through the NATO-Russia Council.

New opportunities will come, after the long awaited Russian ratification of the SOFA-agreement with NATO. This agreement opens up for new confidence-building measures between Russia and NATO nations, such as joint exercises on Russian territory.

We note that the Russian defence budget is growing. We know that north-western Russia is still an area of strategic importance and that Russia maintains a considerable military presence in this region. We have observed that Russian strategic bombers are back outside our coastline and other places. We do not conceive of the modernization of the Russian armed forces as a threat to Norway. At the same time Russia today is a country in transition, richer than before and more self-confident on the international stage. There are reasons to be concerned about some of the trends. We cannot foresee where these developments are taking us. Therefore we are following them actively.

The Norwegian Armed Forces' presence in the High North, the coast guard included, will be maintained at a high level. The purpose is to secure sovereignty and exercise authority, as well as effective crisis management.

PRESENCE AND PREDICTABILITY

Energy, climate change and security policy are the main factors that are transforming the Arctic stage. A new, challenging scene is emerging in front of our eyes. Confronted with this literal sea of change, how shall we manoeuvre when we move from something we know, to a new situation which we know is unknown?

When we dispatch our personnel to international operations, we always send with them some rules of engagement. These rules are strict guidelines for their conduct in a specific situation.

We have no rules of engagement in the strict military sense here in the High North. But we have a number of important principles that guide our policy of engagement in this region. One of these principles on which our High North policy is based, is that we must be informed. At all times. We must know what is going on in our territory and our neighbourhood. The intelligence officer can assure us that moving foreign military warplanes and naval ships are on a harmless mission. The coast guard will check that the trawlers' logbooks are in order. The international researchers in Ny-Ålesund are in an excellent position to provide us with an early warning when winds of change are blowing and ice is melting. Correct, relevant and updated knowledge is the key to wise decisions and is vital to our security as well as all other aspects of policymaking.

To secure that we are well-informed, we must be there. Presence - on land, at sea and in the air - is therefore a second principle. But presence is a prerequisite not only for collecting information. We have to be physically on the spot to safeguard national sovereignty and exercise authority. A coastal state that takes its responsibilities seriously must vigilantly carry out inspection and other control activities appropriately in our zones of jurisdiction. This requires a 24/7 presence in the maritime areas - we must always be ready with qualified personnel and high-quality capabilities.

A third principle is predictability. I think this is of especially great importance in times of change. This does not mean that we are not able to adapt to a changing environment. This means that we shall be transparent and clear, and inform each other about potential changes. Consistent behaviour builds stability and reduces the possibility of misunderstandings and unwelcome surprises. Captains on trawlers shall be in no doubt that if they are in the wrong place, or fish too much, or take on board undersized fish, they risk being arrested and prosecuted. Predictability on the fishing banks is good for the honest fisherman and it improves our chances of preserving important fishing stocks for future

generations. This is a principle that includes everyone and leaves no one out, and we expect the same from our neighbours and partners as we expect from ourselves: to contribute to the preservation of this vast and important area.

A fourth principle that guides our policy of engagement in the High North is respect for international law. If we all play by the rules laid down by the United Nations and other international bodies, I am convinced that we can preserve stability and a peaceful environment here in years to come. It is no secret that some of the energy-producing areas in the world are prone to tension and conflict. Let us show the world that the circumpolar nations can cooperate and find common ground also when it comes to the management of natural resources.

The fifth and last principle I shall mention is sustainability. Hard work is of paramount importance if we are to succeed and achieve our goal of delivering planet Earth to our children and grandchildren in better shape than it was a generation or two ago. We have a responsibility to our descendants - and the struggling polar bears. Let us think sustainability in all that we do in the High North. We have no right to reduce the quality of life on Earth for future generations.

Knowledge, presence, predictability, international law and sustainability. If we can agree upon these principles as a guide for our activities in the High North, chances are good that the new chapter we are about to write about this region will have a happy ending. This requires that we make history of disagreements, and make new history - one of cooperation and stability that will produce a future with prosperity and wellbeing for man and all other living things. Challenges will be turned into opportunities. This is a tall order. To succeed, we - the governments - need assistance from the highly qualified actors on this scene. As the region is emerging from the frost, we need your knowledge and your advice.

WILL COOPERATION OR RIVALRY DOMINATE THE WAY AHEAD?

It goes without saying, but I will say it anyway: we can only tackle the challenges emerging from the changing Arctic together. We all share the responsibility for securing that the High North remains a peaceful and beautiful place to live. We have to cooperate.

Let us not forget the advice from the poet Rolf Jacobsen. When turning our attention to the north in search of more knowledge and a deeper understanding, we shall not shy away from - if necessary - walking into the wind or climbing mountains. The issue is well worth the trouble. And let us, together, handle the Arctic challenges in such a way that we like what we see when we in the coming years turn our heads more often to the High North.

DÉJÀ-VU AT THE NORTH POLE. PERSPECTIVES ON JURISDICTION AND MILITARY PRESENCE

by Björn Bjarnason, Icelandic Minister of Justice and Ecclesiastical Affairs

I shall relate how Iceland has proceeded to secure its maritime zones via agreements with other states and draw some lessons from this for the Arctic. I shall also touch on changes in security matters in Iceland and the measures taken by the Icelandic authorities in response to these new circumstances.

Between the autumn of 1975 and the spring of 1976, Iceland fought its third and last Cod War with Britain. This was the result of Iceland extending its fisheries jurisdiction to 200 nautical miles. Peace was achieved thanks to Norway's intercession and an agreement was signed in Oslo on 1 June 1976. Norway placed great importance on peace between its neighbouring countries and allies within NATO in the North Atlantic, and Knut Frydenlund, Norway's foreign minister, interceded once Iceland had cut off its diplomatic relations with Britain to protest against the actions of British war ships in the Icelandic zone.

After control over the 200 miles had been secured, joint lines of delimitation between Iceland and the Faroe Islands, Britain, Greenland and Jan Mayen needed to be determined.

THE DELIMITATION PROCESS

Of the distance of 290 nautical miles between Iceland and Jan Mayen, Iceland demanded a zone of 200 miles. The Norwegian government protested against this claim and was of the opinion that a median line should be applicable to the delimitation between Jan Mayen and Iceland. Under favourable circumstances, capelin may be caught in the area north of Iceland in the direction of Jan Mayen, and both Norwegian and Icelandic ships fish in that area. The two states disagreed on the rights of their ships to fish in the area until an agreement on the issue was reached in May 1980. Norway acknowledged Iceland's 200-mile exclusive economic zone in relation to Jan Mayen and Iceland acknowledged Norway's 200-mile exclusive economic zone around Jan Mayen. The agreement also provided Iceland with special rights to fish from migrating stocks in the Jan Mayen zone and this provision has proved practical, for example as regards fishing from the Atlanto-Scandian Herring Stock. Furthermore, the fishing agreement included provisions on the settlement of the dispute between the states over control of the continental shelf between Iceland and Jan Mayen. A Conciliation Committee, comprising three members, was established, chaired by Elliot L. Richardson, who was then the head of the US delegation at the United

Nations Conference on the Law of the Sea, the two other members being renowned experts in the field of the law of the sea, Ambassador Hans G. Andersen of Iceland and Ambassador Jens Evensen of Norway.

When considering the division of the continental shelf between two countries, it may be relevant whether individual parts of the continental shelf can be regarded as a “natural prolongation” of the territory of either country. Geoscientists working for the Conciliation Committee studied in particular the geomorphology and the geological structure of the so-called Jan Mayen Ridge between Iceland and Jan Mayen. In their opinion, the northern part of the ridge is a prolongation, in the geomorphological sense, of the continental shelf of Jan Mayen but not of Iceland. On the other hand, they stated that the ridge itself was a prolongation neither of Jan Mayen nor Iceland as regards the geological structure. The scientists were of the opinion that there were not great prospects of finding oil in the area, although this would have to be properly determined through more detailed research. The Conciliation Committee was not of course a court but had the task of submitting proposals to the governments of Iceland and Norway on an accessible and reasonable solution to the dispute. The Committee investigated thoroughly any international practice and court rulings which could give it guidance in the course of its work. Following this examination, the Committee proposed that the limits of the continental shelf would be the same as those of the exclusive economic zone.

Further, the proposal included that an area of 45,000 km² on the Jan Mayen Ridge, with the best probability for finding oil, would be jointly exploited by Iceland and Norway. Around one quarter of the joint area was on Iceland's side of the delimitation line and about three quarters north of it. Iceland would hold 25 per cent of the natural resources in the Norwegian part of the area and Norway 25 per cent in the Icelandic part. The first phase of any research in the whole area would be funded by Norway. The Norwegian and Icelandic parliaments agreed to this conclusion and relations have remained good in the Jan Mayen area ever since the agreement came into force 2 June 1982.

ICELANDIC OIL EXPLORATION AT JAN MAYEN

Although scientists considered it rather improbable 27 years ago that oil would attract people to the area between Jan Mayen and Iceland, things have changed. In March 2007, the Icelandic government issued a report with a proposal to start oil exploration in the so-called Dragon Area, which is located at the Jan Mayen Ridge on the Icelandic continental shelf. The area is about 42,700 km² and thereof around 13,000 km² fall within the area covered by the Jan Mayen agreement. The government has decided to allocate funds to studying in more detail the climate and other natural circumstances in the area.

The Icelandic authorities hold enforcement and management powers in the area which falls within their jurisdiction. There Icelandic legislation applies, Icelandic oil policy and Icelandic provisions on the monitoring of the activities, security measures and environmental protection. On the other hand, it has to be clear whether Norway intends to utilize its right to participate in the exploration and exploitation of the Icelandic part of the area covered by the Jan Mayen agreement. Should this be the case, it has to be stated in the licence tender that Norway has rights to up to a quarter of any licence granted. Representatives of the states have already started consultations on these issues.

For Iceland, the most pressing issue was the delimitation of Jan Mayen so that any doubts regarding jurisdiction following the extension to 200 miles might be dispelled. In 1997, an agreement was reached on maritime delimitation with regards to Greenland. The Danish government had made a reservation on behalf of Greenland in 1975 concerning base points on islands north of Iceland. In the summer of 1996, Danish capelin fishing vessels started fishing in a disputed area north of one of the islands, Kolbeinsey, but in the spirit of strengthening good relations between the neighbouring countries, that is Iceland, on the one hand, and Denmark and Greenland, on the other hand, an effort was made to reach an agreement on the line of delimitation. The agreement, which was signed on 11 November 1997 and covers both the delimitation of the exclusive economic zone and the continental shelf, provided for the island Grímsey having full effect in the delimitation and Iceland, therefore, acquired the whole area affected by the island, around 1,500 km². In addition, Iceland acquired 30 per cent of the area affected by Kolbeinsey, around 3,000 km² of an area, amounting to approximately 10,000 km².

Simultaneously, an agreement was concluded between Iceland, Denmark/Greenland and Norway on the delimitation of a small triangular maritime area between Iceland, Greenland and Jan Mayen where their jurisdictions overlapped. The legal status of this area was complex as each party had full rights and jurisdiction vis-à-vis one of the other two parties and no rights or jurisdiction vis-à-vis the other. In the agreement, the area was divided into three parts, whereof Iceland acquired 35 per cent, Denmark/Greenland 35 per cent and Norway 30 per cent, and thereby the aforementioned legal uncertainty was eliminated.

A disputed maritime zone was on the boundaries of the Icelandic exclusive economic zone and the British fisheries jurisdiction, which had a base point on the rock of Rockall. In the summer of 1997, the United Kingdom ratified the United Nations Convention on the Law of the Sea and the government then declared that it would withdraw its claim to a 200-mile fisheries jurisdiction from Rockall, as the claim was not compatible with the provision of the Convention stipulating that rocks, unable to sustain human habitation or an economic life of their own, shall not have any exclusive economic zone or continental shelf.

Consequently, relevant changes were made to the British fisheries zone and thus the dispute over the delimitation of the Icelandic exclusive economic zone to the south was settled.

Finally, in February 2007, an agreement was concluded on the delimitation of a disputed maritime area of 3,700 km² between Iceland and the Faroe Islands. The dispute came about when Icelandic authorities drew a median line between Hvalbakur, an island off the east coast of Iceland, and the Faroe Islands, while Denmark, on behalf of the Faroe Islands, drew a median line between the mainlands of both countries, ignoring Hvalbakur. Iceland acquired 50 per cent of the southern part of the disputed area, which will be open to fishing by vessels from both countries, and 60 per cent of the northern part of the area. Through this agreement with the Faroe Islands, Iceland formally concluded the delimitation of its exclusive economic zone in relation to the zones of its neighbouring countries, 22 years after Iceland became the first western country to ratify the United Nations Convention on the Law of the Sea in 1985.

THE LAW OF THE SEA CONVENTION

As is well known, the Convention is the only comprehensive international agreement in the field of the law of the sea and applies not only to the sea itself but also to the seabed and the air space above. The Law of the Sea Convention contains provisions on all uses of the ocean, such as navigation, fishing and the exploitation of oil and gas. Amongst the obligations undertaken by Iceland through its ratification of this remarkable Convention was to comply with Article 76 on the determination of the outer limits of the continental shelf beyond 200 nautical miles. This includes presenting a submission on the limits of the continental shelf to the United Nations Commission on the Limits of the Continental Shelf (CLCS) before the prescribed deadline in May 2009.

Preparation of the submission commenced in 2000 and is still ongoing. This work entails the most extensive research of the continental shelf around the country ever undertaken. The 200-mile exclusive economic zone of Iceland comprises around 750,000 km². On the other hand, Iceland claims continental shelf beyond this limit comprising around 1 million km², based on the provisions of the Law of the Sea Convention. This includes three areas: one in the so-called Herring Loophole in the Norwegian Sea, one on the Reykjanes Ridge south-west of Iceland and one in the Hatton Rockall Area to the south.

Only Iceland claims continental shelf on the Reykjanes Ridge. However, Denmark, on behalf of the Faroe Islands, the United Kingdom and Ireland, as well as Iceland, has claimed rights to the continental shelf in the Hatton Rockall Area. Iceland has emphasized that the parties should reach an agreement on the division of the Hatton Rockall Area before presenting a joint submission to the Commission on the Limits of the Continental Shelf. In 2001, Icelandic authori-

ties initiated quadrilateral consultations between the parties concerned on this issue and those consultations have since been continued on a regular basis. Although the aforementioned deadline to present a submission to the Commission does not apply to disputed areas such as the Hatton Rockall Area, Iceland wants to contribute to a prompt solution of this issue.

In September 2006, the foreign ministers of Denmark, Norway and Iceland, as well as the *Lagman*, the prime minister, of the Faroe Islands, signed an agreement on the division of the continental shelf beyond 200 nautical miles in the area between Iceland, the Faroe Islands, mainland Norway and Jan Mayen in the southern part of the Herring Loophole. This agreement was the result of extremely positive and constructive negotiations between these countries which lasted only a few months. Iceland acquired 29,000 km², the Faroe Islands 27,000 and Norway 55,500 km² of the area in question.

This division of the continental shelf beyond 200 nautical miles is conditional upon each party successfully demonstrating its right to its negotiated part of the continental shelf in its submission to the Commission on the Limits of the Continental Shelf. The Icelandic part lies entirely within 60 miles from the so-called foot of the continental slope north-east of the country and belongs, therefore, without a doubt, to its continental shelf pursuant to the Convention on the Law of the Sea. Pursuant to its rules of procedure, the Commission does not have the authority to deal with submissions from individual states regarding disputed continental-shelf areas, unless all parties to the dispute have consented to it. One part of the agreement between Iceland, Norway and Denmark/Faroe Islands is the mutual consent of the countries with regard to the presentation of their submissions to the Commission on the Limits of the Continental Shelf.

As far as I can gather, this is the only agreement on the division of the continental shelf beyond 200 miles that has been concluded between more than two states. The agreement may set a certain precedence and serve as guidance in settling disputes of this type and is, at the same time, a textbook example of how to settle disputes between neighbouring countries peacefully.

RESOLVING MARITIME ZONES DISPUTES

The reason for relating the struggle of Iceland for its maritime zones in such detail is that it shows how disputes, which may be imminent with regard to the control of maritime zones in the Arctic Ocean, may be solved.

In the first place, neighbouring countries, two or more, need to solve any disagreement about the delimitation of their exclusive economic zones and continental shelves within 200 nautical miles, including the baselines used for calculating these zones. Had Iceland and Norway been unable to reach an agreement on the delimitation of the maritime area between Iceland and Jan Mayen,

the dispute would have prevented any negotiations with regard to other related areas.

In the second place, the states need to reach an agreement on the division of the continental shelf in disputed areas beyond 200 nautical miles. Such an agreement may either entail a complete division or some kind of a joint exploitation area.

In the third place, neighbouring states need to present their submissions, or a joint submission, regarding the outer limits of the continental shelf beyond 200 nautical miles to the Commission on the Limits of the Continental Shelf. On the basis of the recommendations of the Commission, the states may then determine the outer limits, i.e. the limits between the continental shelf and the international seabed area beyond, in a final and binding manner.

ICELAND'S SECURITY INTERESTS IN THE ARCTIC

Due to its geographical position, Iceland has a great interest in activities in the Arctic. Climate changes will lead to further exploitation of natural resources in that area and accordingly increased arctic shipping, not to mention the impact of the potential opening of the North East passage to the Pacific Ocean. All of this will have a great effect on the geopolitical position of Iceland.

The westernmost gate from the Arctic into the North Atlantic is the Davis Strait between Canada and Greenland, about 340 km wide. The Denmark Strait between Greenland and Iceland is 286 km wide. The third and widest gate is the one between Iceland and Norway, about 800 km wide. This gate is divided into two main sea lanes by the Faroe Isles – one to the east to the European Continent and the UK, the other to North America.

During World War II, US convoys sailed north of the conflict area in the Atlantic, through the Denmark Strait, making stopovers in Iceland on their way to Murmansk, Russia. During the Cold War, tension between east and west escalated in the North Atlantic and the GIUK gap turned into the front line of NATO as regards the expansion of the Soviet fleet, and a sophisticated radar system was set up in Iceland in the eighties to monitor the flights of Soviet bombers into the North Atlantic, the number of journeys peaking in 1985.

Taking note of the oil and gas exploitation in the Barents Sea and the increased transport of oil by sea from Western Siberia, it is estimated that in 2015 a total of 500 tankers of 100,000 tons each will pass Iceland annually headed in each direction.

At the time of the Cold War, the military importance of Iceland increased in direct relation to the tension between east and west in the North Atlantic and culminated around the middle of the eighties. Icelandic authorities showed great consideration for the requests of the United States and NATO regarding military preparedness at the Keflavík Naval Air Station, wherefrom both submarine and

air surveillance was conducted with the most advanced technology available at the time. Debates about the US Defence Force staying were very prominent in Icelandic politics during those years. Those of us who supported the active participation of Iceland in the joint defence of the NATO states enjoyed extensive and successful cooperation with Norwegian experts and authorities during those years, and I recall participation in many conferences in Norway on ways to enhance security in the North Atlantic.

It is in a sense remarkable how long it took the US Government to make a decision with regard to its military relations with Iceland after the Cold War, and how in the end the departure from Iceland of the entire force was unilaterally manoeuvred in the autumn of 2006. Despite the military departure from Iceland, the US still secures the defence of Iceland on the basis of the defence agreement from 1951.

In August 2007, US authorities deployed fighter planes, as well as AWACS planes, for a military exercise in Iceland, which included the participation of the Norwegian Air Force. At the same time, the Special Operations Unit of the National Commissioner of the Icelandic Police exercised alongside special task forces of the militaries in Norway, Denmark and Latvia; in addition, Danish warships and the Icelandic Coast Guard participated in the exercise. Some 24 hours after the military exercise ended in Iceland, President Vladimir Putin of Russia declared that Russian bombers would resume flying over the North Atlantic, and in the early hours of 17 August, Russian military aircraft flew from the Kola Peninsula and headed south across the Atlantic, for example along the Denmark Strait and north by the east coast of Iceland.

In security matters, Iceland depends on contributions from civil law enforcement institutions that are also reliable cooperative partners with our neighbouring countries. A military-to-military relationship is not an option for Iceland as we have no armed forces.

TOWARDS A NORTH ATLANTIC COAST FORUM?

It has been my task as Minister of Justice to restructure the police and the Coast Guard to take on new responsibilities. Decisions have been made to purchase a new fixed-wing coast guard aircraft and to build a new 4000-tonne patrol vessel, both scheduled to be operational in 2009. A collaboration agreement between the governments of Iceland and Norway aims for a joint Norwegian-Icelandic tender of specially designed long-range search and rescue helicopters – two to three of them for the Icelandic Coast Guard. Furthermore, reorganization of the civil defence administration is underway through the strengthening of its political aspect, with the operations command being moved to a single operations centre providing access to all response units.

It is important to strengthen the cooperation of the countries adjacent to the western part of the GIUK gap, i.e. the Faroe Islands, Iceland and Greenland, to ensure, as far as possible, the safety of maritime navigation in that area. Iceland and Denmark have reached an agreement on close cooperation in these fields signed by me on behalf of Iceland and Søren Gade, the minister of Defence, on behalf of Denmark. In the near future, Iceland will, furthermore, accede to the convention of Britain, the US and Canada concerning search and rescue in the North Atlantic. In fact, I believe it to be very desirable to establish a multilateral North Atlantic Coast Guard Forum, a new maritime security and safety organization in the North Atlantic and in the Arctic. A Forum which would provide a framework for North Atlantic coast guards to interact and cooperate. This might lead to all kinds of innovations in a regional context, such as a standing coast guard force in the North Atlantic and in the Arctic, with member nations providing vessels and crews.

New and completely altered circumstances call for new methods in which civil security bodies play an important role. Iceland aims to strengthen these bodies and establish close cooperation in their fields of operation to achieve our common goal, which is to create the best possible circumstances for the peaceful exploitation of natural resources in the Arctic.

EMERGING FROM THE FROST: THE U.S. PERSPECTIVE

by Claudia A. McMurray, Assistant Secretary, U.S. Department of State

The Arctic is one of the last and most extensive areas of wilderness, a vast ice-covered area with complex and fragile ecosystems that are teeming with life – from fish, whales, and seals, to caribou, polar bears, and birds – that will be affected by any changes in the Arctic’s delicate environmental balance. In the early autumn of 2007, *The New York Times* and other media reported that the cap of floating sea-ice on the Arctic Ocean had shrunk by more than one million square miles – or six times the size of California. This study, conducted by the National Snow and Ice Center in Colorado, reflects many studies that show greater warming in the Arctic than in the rest of the world. Although the patterns of melting are still not fully understood, the study’s authors indicate that “you can’t dismiss this as natural variability.” As we gain a greater understanding of how warming and the human footprint may affect the environment and ecosystems in the Arctic, it is also clear that these changes – the loss of ice and the opening of previously inaccessible areas – also provide new opportunities for energy exploration in the region.

INTERNATIONAL COOPERATION

These opportunities come at a time when the nations of the world are confronting the challenge of securing sufficient, affordable, and reliable supplies of energy for their populations, while sustaining the current high rate of global economic growth, expanding access to energy in the developing world, and meeting climate change and other environmental goals.

In the United States we believe that through international cooperation we can develop and implement a wide portfolio of near, medium, and long-term measures to successfully meet this challenge. We believe that international engagement on the energy issues is not only critical to U.S. energy security, but to that of every nation.

And we believe that energy security is no zero-sum game, but that in fact, no nation’s energy security can be had at the expense of any other. President Bush has presented a vision for energy security that begins at home, with actions the United States must take domestically. This vision also guides our international energy policy.

Our policy focuses on a diversity of energy sources and the wise management of energy demand. For example, a centerpiece of the President’s plan is to reduce America’s gasoline usage by 20 percent in 10 years. To achieve this, the United States is working to diversify the fuels we use to power our cars and



Fig. 3: Map showing the northern parts of USA, Canada and neighbouring countries in the Arctic.

trucks by increasing the use of renewable biofuel, in the form of ethanol, and by using energy more wisely by setting higher standards for automotive efficiency.

We are moving forward on battery research for plug-in hybrid vehicles that can be powered by electricity from a wall socket, instead of gasoline. We are conducting research on hydrogen-powered vehicles that emit pure water instead of exhaust fumes. We are taking steps to make sure these technologies reach the market. And we're setting new mandatory fuel standards that require 35 billion gallons (830 million barrels) of renewable and alternative fuels by the year 2017.

The President's plan calls for the United States to double the size of our strategic petroleum reserves and increase our production of domestic oil supply in environmentally sensitive ways. We think doing so will reduce, over time, our nation's dependency on oil imports and increase our energy security.

The United States' international energy security strategy seeks to promote abroad the President's vision for energy security at home. It supports:

- a greater diversity of energy sources, like alternative fuels (including biofuels) and clean coal;
- energy efficiency and conservation through technology, international partnerships, and market pricing;
- a diversity of secure and reliable energy supply routes, and;
- a diversity of energy suppliers working in an open, competitive, and transparent energy marketplace.

CHALLENGES

The world community faces an unprecedented set of challenges in global energy that makes our energy security objectives more difficult to achieve. These include:

- tight global supply and demand balances;
- geopolitical challenges in major oil production centers;
- exploding global economic growth driving greater energy use; and
- our shared concern over the global environment.

Global energy markets are being shaped and strained by unprecedented economic growth in Asia. Demand for natural gas, oil and coal is expected to rise faster in East and South Asia than in any other region in the world. If the forecast growth rate of 3.0 percent annually is maintained, oil demand in the region will roughly double by 2025. Many of the world's major oil-producing regions are also locations of geopolitical tension, and possibilities exist of unexpected disruptions in supply. Instability in producing countries is the greatest challenge we face, and this adds a significant premium to world oil prices. Concurrently, we are faced with the rise of what is often called resource nationalism, involving consumer countries attempting to "lock up" upstream assets in the pursuit of a false notion of energy security, and involving producer countries rejecting much needed foreign investment and expertise in the face of declining production levels. Roughly two-thirds of the world's oil and gas reserves are in countries that provide limited access or are completely closed to foreign investment.

National oil companies own about 50 percent of the world's proven oil reserves. And we are seeing increasing instances of manipulation of resources in countries with large resource bases. Examples include: further limiting access to resources for commercialization; renegotiating contracts or even outright expropriation of assets; renationalizing assets; and cutting off supply.

Because of these factors, prices have increased dramatically since 2002. And we do not project much change in this in the near future because the uncertainties I have mentioned will likely still be with us and demand will most certainly increase.

As a result of all these factors, the Arctic region is set to play a major role in the world's future energy security. The United States Geological Survey estimates that the Arctic could be home to more than 25 percent of the world's undiscovered reserves of oil and natural gas.

That said, most would agree that the question is not *whether* the world will extract those reserves, but instead, "*How* can we do so in an environmentally sustainable and socially responsible way?"

The Arctic poses many difficulties in this regard. Because of the harsh conditions and expense of operations, only 35 wells have been drilled in the Alaskan Beaufort and Chukchi Seas. This is a small area tested compared to the size of the area that has been available to lease. The oil and gas industries are working hard to overcome some of the barriers to drilling.

In shallow waters, for example, industry has developed bottom-founded drilling platforms that can facilitate a year-round drilling program.

To address concerns about noise from drilling operations during the short open-water season, the Department of the Interior's Minerals Management Service – the federal agency that manages the U.S.'s natural gas, oil and other mineral resources on our outer continental shelf – is involved in several studies to find ways to lessen the transmission of sound from drilling structures and seismic noise.

Arctic projects face technical, environmental, regulatory and legal challenges because offshore activities are considered new and unproven. There is currently only one outer continental shelf development project, called Northstar, which took 19 years from discovery to first production.

Northstar faced several challenges to reach production. It was the first stand-alone island production facility in the Alaskan Arctic. It was developed with no road support so the staging of material to the island was a scheduling and logistical challenge. Moving the oil to market required the design, installation and operation of the first sub-sea pipeline to be installed in the Arctic. Concerns about detecting leaks led to the installation of a leak detection system, which was also a first for the Arctic. The Minerals Management Service maintains an ongoing research program to address the improvement of safety and the development of new technology for use in the Arctic and elsewhere in the ocean environment. These research efforts are available to the public on the Service's website.

Future exploration and development activities must be carried out in a manner that is responsible and respectful to the rich and diverse ecosystem and local native culture. The Minerals Management Service will continue to work with industry and local communities to ensure that these issues are taken into account, and that local concerns relating to subsistence activities, spill preven-

tion, and clean-up capabilities are addressed in a way that allows operations to proceed.

This effort includes:

- providing opportunities for local residents to participate actively in the operations as marine mammal observers to protect against injury to whales in the area;
- providing for conflict avoidance agreements with subsistence users to alleviate unintended interaction between the operators and the subsistence users; and
- ensuring that local concerns regarding oil-spill response and clean-up capabilities are addressed.

Future development in the near-shore Arctic environment will make use of ultra-extended reach drilling – drilling where the onshore facility drills down and then out horizontally sometimes as much as three to five miles across. BP is currently planning the development of the Liberty Field using ultra-extended reach drilling. They propose to extend the reach of this type of drilling to over 40,000 ft horizontal departure.

ARCTIC MONITORING AND ASSESSMENT

The United States will continue to both share and seek best practices with, and from, our international partners on these and other projects. In October 2007, the United States sponsored the Arctic Energy Summit's Technology Conference to work together with other Arctic Council nations on the best solutions to the unique set of environmental, social, and technical challenges of energy extraction in the region. The conference provided a forum for international, interdisciplinary experts to present research and discuss the Arctic as an emerging energy province. Topics that were covered at the conference included extractive energy development, renewable and rural energy, and environmental, socio-economic and sustainability impacts of energy use in the North.

And speaking of the Arctic Council, the United States is pleased to be a partner with Norway to lead the Arctic Council's assessment of the potential effects of oil and gas activities in the Arctic.

At their 2004 ministerial meeting in Reykjavik, the Arctic Council Ministers asked the working group, the Arctic Monitoring and Assessment Program, to assess the effects and potential effects of oil and gas activities in the Arctic. This assessment updates and expands on earlier reports. The assessment was completed in early 2008 and includes a comprehensive history and projected near-future for oil and gas activities, including:

- past practices
- modern practices

- technological developments
- regulatory systems
- monitoring and research
- oil spill response capabilities
- and a full inventory of Arctic leasing and licensing, seismic data collection, exploration and development drilling, and production volumes.

In addition, for the first time, such an assessment surveys the socioeconomic effects of the wide range of oil and gas activities on local and indigenous populations. We are fortunate to have strong international partnerships through organizations such as the Arctic Council. The Council, and conferences like this one, provide opportunities for countries with territory in the Arctic to meet and find common solutions and air concerns about the challenges I have mentioned.

CONCLUSION

Let me in concluding raise a few other challenges that affect our search for energy in the Arctic.

Determining the limits of the continental shelves of the five countries bordering the Arctic Ocean and settling the boundaries between them will be resolved through the provisions established under the Convention on the Law of the Sea and through bilateral negotiations between neighboring countries.

The President has long urged U.S. accession to the Convention. And we are hopeful that the Senate will finally give approval to it.

In September 2007, the U.S. Coast Guard icebreaker, the *Healy*, returned from a four-week cruise that had mapped a portion of sea floor on the northern Chukchi Cap. The *Healy* did not encounter a significant ice pack at any point in its journey, and the bright blue multi-year ice and former pressure ridges were visibly disintegrating. In fact, the *Healy* was scheduled for an “ice liberty” where the ship would stop so those onboard could experience Arctic ice first-hand, but the ship never encountered a piece large enough to do so.

On previous trips, the *Healy* would hit an ice pack too difficult to break through, forcing it to try a different route, or in one case to float with the pack until it could break free. In 2007 it was unimpeded, and collected more than three times the data and ventured much farther north than originally planned. These observations by the *Healy* are consistent with other observations and predictions of ice melting in the Arctic Ocean. Warming in the Arctic in and of itself is a concern. But the loss of ice also opens up previously inaccessible shipping lanes, and this raises issues such as:

Navigational rights – ensuring that the Arctic remains open to international oil companies. International oil companies are the world’s most efficient

producers of oil and gas, and they are the only companies that have the critical technological experience needed for this challenging environment.

Promoting contract sanctity – projects have long investment recovery time-frames, so stable and dependable investment terms and regimes are vital for international oil companies.

The world will soon need the vital resources that the Arctic provides. It is important that we work together to provide them efficiently, sustainably, and cleanly. It is also critical that we avoid unhelpful sovereignty conflicts and nationalistic policies, and ensure open and transparent investment opportunities for all companies.

William Shakespeare wrote: “One touch of nature makes the whole world kin.”

The issues calling for our action today must be solved by a global community working toward common global interests. This will be our goal and challenge in the months and years ahead.

Part III

Jurisdiction, transport, resources and security

JURISDICTIONAL ISSUES IN THE ARCTIC: AN OVERVIEW¹

Dr Alf Håkon Hoel, Associate Professor, University of Tromsø

INTRODUCTION

An increasing demand for natural resources and climate change have combined to bring the Arctic into the limelight. The expansion northwards of petroleum activities, significant fisheries, and the reduction of sea-ice in the central Arctic Ocean are among the phenomena that raise questions about the governance of the region.

Here, I shall address the question of jurisdiction in the Arctic – *who can decide what where?* On land this issue has by and large been settled; the terrestrial boundaries between the countries in the Arctic region are agreed upon. However, there remain jurisdictional issues in the marine realm, as a number of maritime boundaries are still unresolved.

The situation in the Arctic region is not special in that regard, however. Globally, there are some 400 major marine boundaries, and less than half of them have been resolved.² In other words, not having an agreed marine boundary is more normal than having one.

FACTS AND FIGURES

The central Arctic Ocean – the area to the north of the Eurasian landmass, Greenland and North America – is 14 million km². Less than half of this is high seas, beyond the Exclusive Economic Zones (EEZs) of the five countries bordering on the Arctic Ocean: Russia, the USA, Canada, Denmark/Greenland and

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- 1 I am grateful to Odd Gunnar Skagestad and Douglas Brubaker for comments to an earlier version of this paper.
 - 2 D. Anderson, “Negotiating Maritime Boundary Agreements: A Personal View”, in *Maritime Delimitation*, eds R. Lagoni and D. Vignes (Leiden: Martinus Nijhoff Publishers, 2006).

Norway. The continental shelf constitutes 37 per cent of the basin. It is widest off Russia, and most of it is within the EEZs of the five littoral states.

With the exception of petroleum activities on the continental shelf to the north of Alaska, the Arctic Ocean to the north of the continents is not a major arena for economic activities today. Fishing mainly takes place in the seas adjacent to the central Arctic Ocean, the Bering Sea and the Barents Sea in particular. These fisheries are globally significant, accounting for about 10 per cent of the global production of fish for human consumption.³

The bulk of Arctic marine economic value is created in the EEZs of the Arctic countries to the south of the Arctic Ocean. The EEZs and high seas in the Arctic Ocean are marginal in this regard.

THE LAW

International ocean law (“the law of the sea”) lays down the rules for how the oceans and the natural resources there are to be administered and used. The major body of law in this regard is the 1982 Law of the Sea Convention (LOSC), which entered into force in 1994. All Arctic countries except the US have ratified it. The 1958 Continental Shelf Convention is also important in this regard.

The rules of the global oceans regime essentially provide the answers to the question posed at the outset: *who can decide what where?* The single most important aspect of the development of the law of the sea during the post World War II period, is the extension of coastal state jurisdiction. The Convention establishes that coastal states have sovereign rights over natural resources in a 200 nautical mile (370 kilometers) *Exclusive Economic Zone (EEZ)*, calculated from the coastal baseline, and including territorial waters. Here, the coastal state can decide how resources are to be managed and used.

Beyond the EEZ are the *high seas* where the principle of the freedom of the high seas applies, with flag jurisdiction rather than jurisdiction based on territoriality. The mineral resources on and in the deep seabed – the area beyond the EEZs and continental shelves – are the common heritage of mankind, under the LOSC Part XI regime. Their exploitation, which is very limited, is administered by a body set up by the Convention, the International Seabed Authority.

An important distinction exists in the Convention between the water column and the continental shelf. The latter is the natural extension of the land territory beyond the territorial waters. While coastal state jurisdiction ends at the 200 nautical mile boundary in the water column, its jurisdiction on the continental shelf extends to the continental margin, the point where the continental slope becomes deep seabed, also beyond 200 nautical miles.

3 A. H. Hoel and H. Vilhjamsson, “Arctic Fisheries”, in *Encyclopedia of the Arctic*, M. Nutall (New York and London: Routledge, 2004), pp. 635–41.

According to LOSC (article 76), coastal states have to determine the outer limits of their shelves utilizing sediment thickness and topography as principles, and then submit information about this to the Continental Shelf Commission set up by the 1982 Convention. Regarding the delimitation of marine boundaries, the basic rule is that delimitations shall be agreed upon between states. This rule was established by the 1958 Continental Shelf Convention, which also established that in situations in which the states fail to reach an agreement, the delimitation is to be made according to a principle of equidistance, a line of equal distance from the coasts of the countries involved.

The Law of the Sea Convention also specifies rules for this, emphasizing that solutions are to be “equitable”. Exactly what “equitable” means is not easy to specify, but state practice and cases before the International Court of Justice (ICJ) would indicate that an equidistant line between opposing coasts, modified primarily by geographical circumstances, is the rule.

States may also decide to resolve boundary issues through judicial procedures. One option is dispute a resolution at court – the ICJ or the Tribunal on the Law of the Sea established by the Convention. Another option is that the states involved agree to establish an arbitration panel to suggest solutions. The basic rule is, however, that states are to exhaust all avenues for arriving at a negotiated solution before resorting to judicial procedures.

THE CURRENT SITUATION – JURISDICTION IN THE ARCTIC

The jurisdictional issues in the Arctic marine realm are many and complex. A number of boundaries remain unresolved. This is not unique, but rather a reflection of the global situation. Navigational rights are also contested.

For the purposes of this paper, we can draw a distinction between two sets of issues: the bilateral issues between countries in the region regarding boundaries between their marine areas on the one hand, and the issues pertaining to the central Arctic Ocean on the other.

Bilateral issues

If we include Iceland, there are 8 bilateral marine boundary issues between countries in the Arctic: Norway’s involvement in a relatively high number of issues stems from its sovereignty over two islands in the Arctic, Jan Mayen and the Svalbard archipelago. Several of these issues are issue complexes consisting of a number of elements, rather than one-dimensional problems. For example, different segments of a boundary line may be subject to separate procedures and agreements.

Russia-US: Bering Sea

Moving east to west, in the Bering Sea and into the Arctic Ocean, the USA and Russia (USSR) agreed to a delimitation line in 1990, and the US ratified the agreement the following year. Russia has, however, not ratified the treaty, which is therefore not in force, though both countries apply the treaty on a provisional basis. There is an area beyond the two EEZs where fisheries are regulated by a 1992 agreement (moratorium on pollock fishing).⁴ The United States would be better off with an equidistant line between the two continents, and the agreed line in the 1990 agreement is a compromise between the two. The line runs from the Bering Sea into the Arctic Ocean, and is 2,575 kilometers.

US-Canada: Beaufort Sea

In the Beaufort Sea, the boundary line between Canada and the US has not been drawn and no active talks toward that end are being held. The Canadian position is that the boundary should run along the sector meridian at 141° W, while the US favors a boundary based on the equidistant principle. The resulting disputed area is 22,600 km². Canada and the US also have a disagreement over the status of the waters in the Canadian northern archipelago. Canada considers these waters internal waters, while the US maintains they are international straits. This is, however, not so much a boundary delimitation issue as a dispute over where baselines should be drawn.

Canada-Denmark/Greenland: Davis Strait

Canada and Denmark/Greenland agreed to a continental shelf boundary between Canada and Greenland in 1973. The boundary runs through the Davis Strait and Nares Strait into the Arctic Ocean. The agreement draws a line of 2683 kilometers, broadly based on the equidistant principle. A minor dispute remains over a small gap in Kennedy Channel due to disagreement over Hans Island.

Denmark/Greenland-Iceland: Fram Strait

Denmark/Greenland and Iceland agreed to a continental shelf boundary and fisheries zone delimitation in the Denmark Strait in 1997. The agreement is based on an equidistant line, and runs from 63° 18' N to 69° 35', some 700 kilometers.

4 The Russian position on all its Arctic boundary issues is essentially determined by a 15 April 1926 Decree where the Soviet Union claims all lands and islands in the Arctic Ocean sector between 32° 34' E and 168° 4' W.



Fig. 4: Map depicting the agreed boundaries between countries (whole line) and unsettled boundaries (dotted line).

Denmark/Greenland-Norway: Jan Mayen and

Denmark/Greenland-Norway: Svalbard

Denmark/Greenland and Norway had two boundary issues, which have both been resolved. One is the boundary between Greenland and Jan Mayen, which was annexed by Norway in 1929; the other is the boundary between Greenland and Svalbard, which is under Norwegian sovereignty thanks to an international treaty adopted in 1920. The first was resolved by a decision of the International Court of Justice in 1993, followed by a bilateral agreement in 1995. The boundary takes the equidistant line as the point of departure for delimitation, but is adjusted to take geographical circumstances into account. The boundary

between Greenland and Svalbard was agreed in 2006, based on an equidistant principle. The boundary line runs 800 kilometers to 83° 43' N and pertains to the continental shelf as well as to the water column.

Iceland-Norway: Jan Mayen

The Norwegian island of Jan Mayen is situated to the northeast of Iceland, with 290 nautical miles between the baselines. The fisheries zone of Jan Mayen and the Icelandic EEZ therefore overlapped substantially. Iceland and Norway negotiated two agreements in 1980–1981. The 1980 agreement contains provisions for fisheries management. Following recommendations from a conciliation commission, the 1981 agreement gives Iceland a full EEZ, and defines a seabed area of 45,000 km² (2/3 on the Norwegian side of the boundary), where hydrocarbons are subject to joint development and the sharing of benefits (1/4 in the others zone).

Norway-Russia: Barents Sea

In the Barents Sea, Norway and Russia have held formal talks about the delimitation of a boundary since 1974. Norway's position is that the boundary line is to be drawn according to the equidistant principle, while Russia advocates a boundary drawn along a sector line running from the end-point of the land boundary to the North Pole (cf: the 1926 Decree). The resulting disputed area is 175,000 km², running from the outer limit of the territorial waters, between Svalbard and Novaya Zemlya and into the Arctic Ocean. The continental shelf covers the entire Barents Sea, and is believed to harbor significant amounts of petroleum. As to the water column, an area of 55,000 km² is high seas. The boundary for the territorial waters in the Barents Sea is agreed. In the disputed area, a provisional arrangement clarifying responsibilities for enforcement of jurisdiction in fisheries – “the Grey Zone” – was agreed on in 1978. The Grey Zone also includes some areas in undisputed Norwegian and Russian waters, more so on the Norwegian side.

As regards Svalbard, the conflicting views are not about the extent of boundaries or Norway's sovereignty. Rather, the issue is the geographical scope of the equal treatment and tax provisions of the 1920 Svalbard Treaty, i.e. *how* Norway can execute its sovereignty in the waters beyond the territorial waters off Svalbard.

Bilateral boundaries in the Arctic (resolved = final agreement arrived at and ratified):

Bilateral boundaries	Resolved	Unresolved
US-Russia Bering		x
US-Canada Beaufort		x
Canada-Greenland Davis Strait	1973	
Denmark/Greenland - Iceland	1997	
Denmark/Greenland - Norway Jan Mayen	1993, 1995	
Denmark/Greenland-Norway Fram Strait	2006	
Iceland - Norway Jan Mayen	1980, 1981	
Norway - Russia Barents Sea		x

THE CENTRAL ARCTIC OCEAN

As to the areas *within* national jurisdiction in the Central Arctic Ocean, five states (the USA, Russia, Canada, Denmark/Greenland, and Norway) are littoral states to the Arctic Ocean and are entitled to EEZs there.

In their EEZs under the LOSC the coastal states have sovereign rights over the natural resources, and are responsible for their management and optimal utilization. Currently, economic activity in these areas is limited, as they are ice-covered for extended periods of the year. Navigation occurs in some areas, mainly in the Northwestern and Northeastern Passages.

As regards the *areas beyond national jurisdiction*, the high seas in the central Arctic Ocean are ice-covered for most of the year and do not offer much opportunity for economic activity. The deep seabed here, subject to the principle of the common heritage of mankind, appears to be limited. More than half of the sea floor beyond the EEZs is continental shelf and therefore appears to fall under the jurisdiction of the littoral states.

Extensive media coverage was given in the summer of 2007 to a private Russian expedition seeking to substantiate a Russian claim to a suboceanic ridge northwards to the pole, stated in its 2001 submission to the Continental Shelf Commission. The important issue in this context is that Russia appears to be following the procedures laid down by international law, and that the other countries in the region also appear to be playing by the internationally agreed rules in this regard.

Fisheries on the high seas in the Arctic Ocean are non-existent today, due to the ice cover. Should the ice cover continue to reduce, one might speculate that we some decades ahead may see high seas fisheries also in the Arctic Ocean. The US Congress in August 2007 adopted a resolution urging the administration

to address this issue.⁵ Also in this case the Law of the Sea Convention provides the basis for the management of those resources, along with the 1995 UN Fish Stocks Convention. Should ice disappear and ecosystems establish themselves, a regional high seas fisheries convention, along the lines of the Northeast Atlantic Fisheries Commission, may have to be negotiated, in a distant future.

An emerging issue with regard to the high seas in the Arctic is the conservation of biodiversity, including the regulation of the use of marine genetic resources. The 1992 Biodiversity Convention does not apply beyond the areas under national jurisdiction (the EEZs). The Law of the Sea Convention would constitute the basis for conservation efforts, but may not be sufficient in this regard. There is an ongoing process in the UN regarding biodiversity conservation in the high seas, and this may have a bearing on the situation in the Arctic.

CLIMATE CHANGE – SOME SECURITY IMPLICATIONS

Climate change has over the last few years emerged as a major challenge to the Arctic nations. The Arctic Climate Impact Assessment demonstrated that temperatures in the Arctic have increased almost twice as much as the global average increase.⁶ Furthermore, most climate models indicate that the rise in temperature in the decades ahead is going to be higher in the Arctic than elsewhere.⁷

The potential effects are manifold, complex, and possibly enormous in scope. Among the most important, having a potential impact on the security situation in the Arctic, are the following:

Larger ice-free areas: satellite surveillance of the distribution of ice started in 1979. Since then, we have witnessed a substantial decline in ice-cover in the Arctic Ocean. The lowest ice coverage area ever recorded was registered in mid September 2007 – at 4.1 million km². This is 20 per cent below the previous 2005 “record”. Reductions in the extent of the sea-ice may open up for new shipping opportunities. As a potential result, the Northwestern and Northeastern Passages may become less interesting as it becomes possible to sail straight across the Arctic Ocean.

Sea level rise: The melting of sea-ice does not affect the sea level. The Greenland and Antarctic ice caps do, however, pose major challenges in this regard. To put things in perspective, if the Greenland ice cap were to melt completely, it would add some six meters to today’s sea level. The corresponding figure for the

5 S. J. Res. 17, US Senate, 110th Cong., 1st. Sess. (3 August 2007).

6 ACIA, *Arctic Climate Impact Assessment* (Cambridge: Cambridge University Press, 2005).

7 The major reason for this is that warming reduces the area covered by ice and snow. And while snow and ice reflects about 80 per cent of the incoming radiation, an open ocean absorbs 90 per cent of it.

Antarctic ice cap is 60 meters. In terms of consequences in the Arctic the most important effect is the change in baselines that an increase in sea level would bring about and the consequences for boundary lines. Another consequence, already felt in Alaska, is that infrastructure, for example roads or buildings, is vulnerable and may have to be moved or replaced.

Changes to the *geographical distribution of living marine resources* is one of the most significant potential impacts of climate change in the North. Here we may witness changes in migratory ranges, the emergence of new species and increased production due to warmer waters. Changes in migratory ranges in particular may bring about allocation conflicts between countries. In this context it should be noted that the two management regimes adjacent to the Arctic Ocean, that for the Bering Sea (US, Russia-US, and regional fisheries management organizations) and the one for the Barents Sea (Norway - Russia) appear to function relatively well.

Climate change can in the future become important in relation to the question addressed here - who can decide what where? The challenges this raises have to be dealt with within global framework treaties relating to the oceans and climate, respectively.

CONCLUSIONS

At the outset, I asked *who can decide what where* in the Arctic. Why is this an important question? The underlying assumption is that where it is clear who has jurisdiction, the potential for conflict and security-related risks are low. The saying "good fences make good neighbors" is certainly an important point when it comes to the ownership and control of natural resources.

Climate change, however, poses challenges to the Arctic countries that go beyond issues of boundaries and boundary delimitations.

I have four conclusions to offer:

1. There is a comprehensive international legal framework regulating how countries can draw boundary lines in the ocean.
2. All countries in the Arctic appear to stick to those rules. In a security perspective this is very important.
3. In the Arctic, the number of unresolved bilateral marine boundaries is relatively low. We surveyed eight bilateral boundary issues, and found that five of these have been settled. Settlement has been reached through negotiation as well as judicial procedures. The processes have been peaceful. No war has been fought over Arctic boundaries.
4. Climate change brings new jurisdictional challenges, relating to reduced ice-cover, a rise in sea level, and changes to the geographical distribution of fish stocks.

ARCTIC MARINE TRANSPORT AND SECURITY: RESPONSES TO CHANGING ARCTIC OCEAN ACCESS

by Dr. Lawson W. Brigham, Deputy Director, U.S. Arctic Research Commission

INTRODUCTION

Satellite images taken during September 2007 indicate remarkably large areas of the Arctic Ocean to be ice-free. In fact, several September dates mark a historic minimum extent of Arctic sea-ice during the era of satellite observations. This natural phenomenon coupled with the presence of the global maritime industry in Arctic coastal seas (for example, large cruise ships sailing in West Greenlandic waters during the summer of 2007) are highly visible reminders that unprecedented changes have already come to the maritime Arctic. Substantial increases in marine access resulting from climatic changes will continue to present real challenges to the existing legal and regulatory structures, which (today) cannot begin to meet the needs of the Arctic states. Security issues and law-enforcement responses will also likely involve much more attention from the Arctic nations as they are forced to address complex marine issues, some without precedent.

Initially, it is important to review the current situation for Arctic marine operations and the current Arctic sea-ice-trends that are highly relevant to marine transport. These reviews will set the context for why the Arctic Council has been proactive and has embarked on conducting a comprehensive Arctic Marine Shipping Assessment. The Assessment has yielded plausible scenarios for future Arctic marine transport and a range of uncertainties – all of critical importance in determining the future directions for cooperation and engagement by the Arctic states in maritime affairs.

RECENT ARCTIC MARINE OPERATIONS

Access by polar icebreaker to nearly all regions of the Arctic Ocean was attained by the end of the twentieth century. Between 1977 and 2007, 72 transits have been made to the North Pole by the icebreakers of Russia (60), Sweden (5), the United States (3), Germany (2), Canada (1), and Norway (1); one quarter of these voyages was in support of scientific research while the remainder is devoted to tourist voyages in the central Arctic Ocean. A remarkable 28 voyages to the North Pole have been conducted during the most recent four summer navigational seasons (2004-07)! Of significance to Arctic marine transport, only one North Pole voyage of the 72 was not conducted during summer. During the period 8 May to 10 June 1987, the nuclear icebreaker *Sibir* (USSR) made its cel-

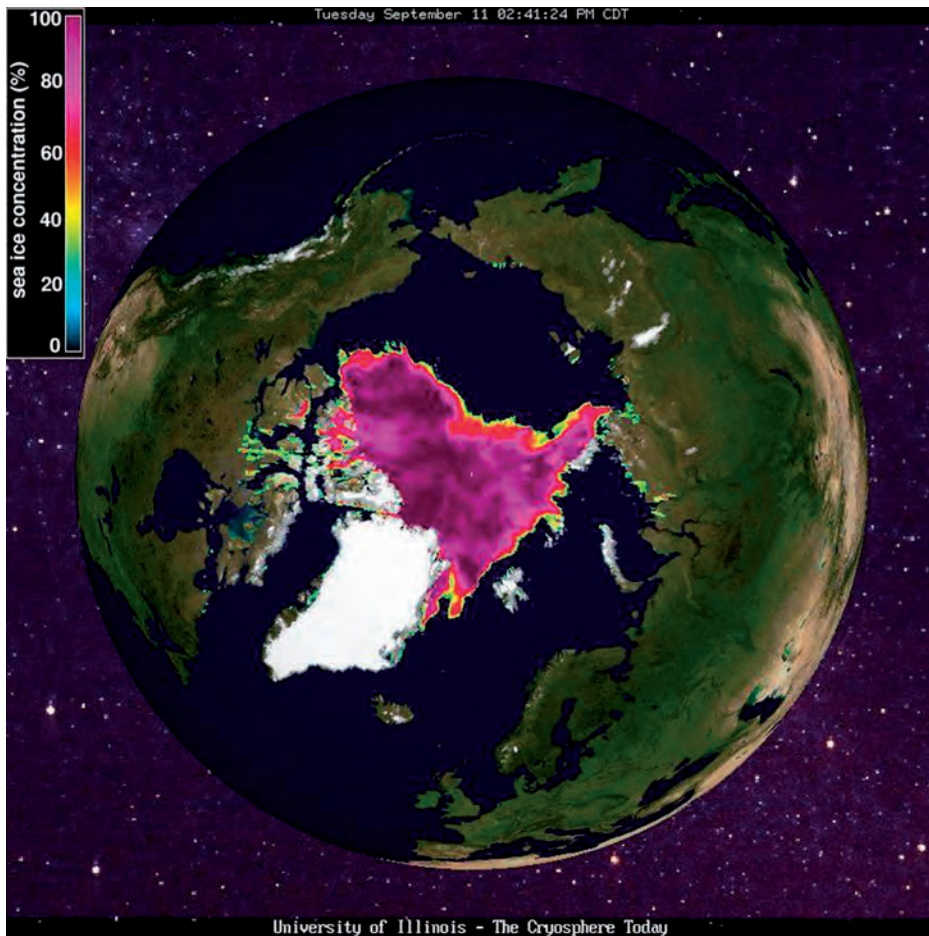


Fig. 5: Passive microwave satellite image for 11 September 2007. This date is very close to the historic minimum extent of Arctic sea ice during the satellite era of observations. Note the large, ice-free area from Bering Strait nearly halfway across the Arctic Ocean. The major routes of the Northwest Passage appear to be ice-free.

celebrated voyage in support of scientific operations (the North Pole was reached 25 May 1987). The importance of this expedition is that the *Sibir* operated successfully in near maximum thickness of Arctic sea-ice, the only surface ship to do so. Since 1991 seven historic, trans-arctic voyages have been accomplished by nuclear and non-nuclear icebreakers (during the summers of 1991, 1994, 1996 and 2005). A review of these pioneering voyages provides substantial confirmation that marine access in *summer* throughout the Arctic Ocean has been achieved by highly capable icebreaking ships. It can also be concluded that it is technically and operationally feasible to make full summer transits of the Arctic Ocean provided one's ship has adequate power, endurance and icebreaking capability.

A challenging figure to obtain with any degree of confidence is the total number of ships operating today in the Arctic Ocean. No one has such a holistic view of Arctic marine operations, but the Arctic Council is working to obtain this primary information from the Arctic states. A snapshot of summer 2004 Arctic operations indicates a diversity of ships sailing in all regions of the Arctic Ocean. Canadian Coast Guard reports indicate approximately 100 voyages by large vessels in the Canadian Archipelago; five of these vessels made full transits of the Northwestern Passage (no commercial cargo ships, only a handful of ice-breakers and yachts). In U.S. Arctic waters, 23 large carriers called in summer at the Red Dog Mine terminal off the northwest coast of Alaska. There were no reported full transits of the Northern sea route in 2004; however, an estimated 165 voyages (52 vessels) carried 1.75 million tons of cargo along the western sector of the Northern sea route primarily between the port of Dudinka on the Yenisey River and Murmansk. At least 27 cruise ships and expedition vessels sailed around the coasts of Greenland during summer 2004 (by summer 2007 there were a reported 150 voyages by tourist ships of all sizes operating in Greenlandic waters). During the late summer of 2004 three icebreaking ships – the nuclear icebreaker *Sovetskiy Soyuz* (Russia), the icebreaker *Oden* (Sweden), and the *Vidar Viking* (Norway) – an icebreaking ship outfitted for drilling – conducted a unique scientific drilling expedition in the most remote reaches of the Arctic Ocean. While it is difficult to obtain a complete record of marine activity in the entire Barents region, estimates appear to show that something in the range of several thousand transits and hundreds of complex marine operations were performed throughout the Barents Sea and in the waters around Svalbard. A cursory review such as this illustrates a significant number of ships and transits in all Arctic waters during summer 2004. The lack of full data for an entire year and the absence of an adequate Arctic database to analyze year-to-year changes in marine traffic highlight the importance of having robust monitoring and surveillance systems in the future. Security and law-enforcement responsibilities alone would seemingly justify such systems for the Arctic coastal states as a logical response to increasing ship traffic throughout Arctic waters.

ARCTIC SEA ICE RETREAT

The Arctic sea's ice-cover is undergoing an extraordinary transformation that has significant implications for marine access throughout the Arctic basin. The extent of the Arctic sea's ice has been declining for five decades and these reductions in extent have been observed in all seasons, with the most prominent retreat in summer. Perhaps as significant have been recent satellite observations of a rapid decline in the area of thick, multiyear sea-ice in the central Arctic Ocean. While Arctic sea-ice thickness changes have been much more difficult to monitor

and evaluate, a comparison of data performed by submarines (between the late 1950s and 1990s) has indicated widespread thinning.

Climate model simulations conducted for the Arctic Climate Impact Assessment suggests that Arctic sea-ice in summer will retreat further and further from most Arctic coasts, potentially increasing marine access and extending the navigational season in nearly all Arctic regional seas; one model from the same analysis showed it is plausible that during mid-century the entire Arctic Ocean could be ice-free for a short period in summer. Recent research has indicated this ice-free state of the Arctic sea-ice cover may occur as early as 2040, if not sooner. Even a brief ice-free period in summer for the entire Arctic Ocean would mean the disappearance of multiyear sea-ice, thicker and usually stronger ice that has survived one or more melt seasons. Such an “event” would have enormous implications for the design, construction and operational standards for all future Arctic marine activities. Although future sea-ice operating conditions in the Arctic Ocean are uncertain, there *is* greater marine access in summer throughout the basin today and it is highly plausible that longer seasons for access and ship navigation will be the norm throughout the twenty-first century. The winter Arctic sea-ice cover remains, but it too could be thinner and should consist of younger sea-ice that is more navigable.

ARCTIC MARINE SHIPPING ASSESSMENT

The Arctic Council, an intergovernmental forum of the eight Arctic nations, has responded to these challenges and embarked on an assessment of current and future Arctic marine activity. The Council’s technical working group, Protection of the Arctic Marine Environment (PAME), was tasked by the Arctic ministers in November 2004 to conduct the Arctic Marine Shipping Assessment (AMSA) with Canada, Finland and the United States as lead countries. Each of the remaining five Arctic nations have key Arctic maritime interests as well as significant roles in AMSA: Denmark (for Greenland and the Faroe Islands, and as a leading maritime nation), Iceland, Norway (for Svalbard and its expanding Arctic offshore energy development), Russia (for the Barents Sea and the entire Northern sea route across the top of Eurasia), and Sweden. AMSA has a circumpolar focus, but is considering regional and local perspectives since regional and community levels will experience the bulk of the environmental, social and economic impacts of expanded Arctic marine use. The AMSA team is working closely with the Council’s expert groups, permanent participants (Arctic indigenous groups in the Council), and Council observers including non-Arctic states and NGOs. The lead countries also understand that AMSA must be inclusive and have sought contributions from the broad, global maritime community. The involvement of key stakeholders such as ship designers, shipbuilders, marine insurers, ship classification societies, pilots, and Arctic mariners is essential to

ensure AMSA's comprehensiveness. In addition, several international shipping firms have contributed to AMSA's initial data survey and scenario creation efforts.

AMSA is a natural progression from two Arctic Council initiatives: the Arctic Climate Impact Assessment (ACIA) and the Arctic Marine Strategic Plan (AMSP). Both approved by the Arctic ministers in Reykjavik in November 2004, ACIA was widely disseminated and immediately gained global attention. ACIA noted that today's Arctic is: experiencing some of the most rapid and severe climate change on the planet; extremely vulnerable to observed and projected climate change and its impacts; and, a region where climate change is already contributing to major physical, ecological, social and economic changes. ACIA also documents the past and ongoing retreat of Arctic sea-ice, and ACIA model simulations show increasing ice-free areas in Arctic coastal seas during spring, summer and autumn. Of the ten key, ACIA impacts or findings, number six addresses a central theme for AMSA: *Reduced sea ice is very likely to increase marine transport and access to resources.*

The Arctic Council's vision for the Arctic marine environment is addressed in the AMSP: *A healthy and productive Arctic Ocean and coasts that support environmental, economic, and socio-cultural values for current and future generations.* AMSP is a strategic guide that emphasizes a risk assessment approach and the application of ecosystems-based management to the Arctic Ocean. The use of the large marine ecosystem (LME) concept in AMSA would be important for determining the broad environmental impacts of current and future marine activities in select regions of the Arctic Ocean. LMEs – ocean areas characterized by distinct bathymetry, hydrography, productivity, and trophic relationships – have been developed for the Arctic Ocean based on the best available ecological information. An initial attempt in AMSA will be to use the LME concept for assessing regional environmental impacts.

The AMSA team has worked to include all ship-based activities and all ship types. A data survey of the calendar year 2004 has been conducted with the Arctic states reporting national data for their respective Arctic regions; each Arctic state could define the geographical areas or limits to be reported to AMSA. AMSA town hall meetings have been held in select Arctic communities, and more will be conducted in 2008, to learn of local concerns and issues related to future Arctic marine operations. Several significant reviews will be included in AMSA: the history of Arctic marine transport, the governance of the Arctic Ocean, the environmental impacts of Arctic marine activity, indigenous marine use, and, current and anticipated Arctic infrastructure to support expanded coastal and offshore marine use.

AMSA is scheduled for completion in spring 2009 and will yield a host of findings and a research agenda of relevance to the Arctic states, indigenous

groups, and many stakeholders in the global maritime industry. The AMSA team and PAME national representatives will work with the Arctic Council's Senior Arctic Officials to develop a set of key recommendations for consideration by the Arctic ministers. The AMSA final report will be distributed widely in the international maritime community.

SCENARIOS AND UNCERTAINTIES

During 2007, AMSA scenario creation workshops were held in San Francisco and Helsinki to create a framework for a set of scenarios, or plausible futures, for Arctic marine navigation up to 2050. One main purpose of these strategic conversations was to identify the major uncertainties that would be central to shaping the future of Arctic marine activity toward 2020 and 2050. While climate change and Arctic sea-ice retreat provide for greater marine access (and potentially longer seasons of navigation), the primary drivers and uncertainties in AMSA were determined to be: (1) *Resources and Trade*: the level of demand for Arctic natural resources and trade. This factor incorporates a broad range of uncertainties including potential market developments, and global and regional instabilities. (2) *Governance*: the degree of relative stability both within the Arctic and internationally. This factor implies a need for effective and efficient legal and regulatory structures.

Four narrative scenarios are being drafted with these two drivers and uncertainties as the framework elements:

- *Polar Preserve* (low demand and stable governance)
- *Polar Lows* (low demand and unstable governance)
- *Arctic Race* (high demand and unstable governance)
- *Arctic Saga* (high demand and stable governance).

Many would agree that the *Arctic Race* scenario best fits the current situation ~ high commodity prices and demand for Arctic natural resources, and a lack of a stable, fully developed maritime governance regime in the Arctic Ocean. The *Arctic Saga* scenario is a state of the Arctic where sustainability is a key tenet and there are shared political and economic interests in the region, laudable goals for a future Arctic Ocean. These scenarios, plausible stories of the future, will assist the Arctic states, all Arctic residents, and the global maritime industry in shaping the future directions and ultimate governance under which multiple uses and sustainable development in the Arctic Ocean can be achieved. Other important uncertainties include: major Arctic shipping disasters; the economic rise of Asia; global oil prices; marine insurance rates; loss of the Panama or Suez canals; escalation of Arctic maritime disputes; conflicts between indigenous groups and commercial use; radical changes in global trade patterns; Arctic transit fees; and, many other factors. One of the valuable outcomes of the

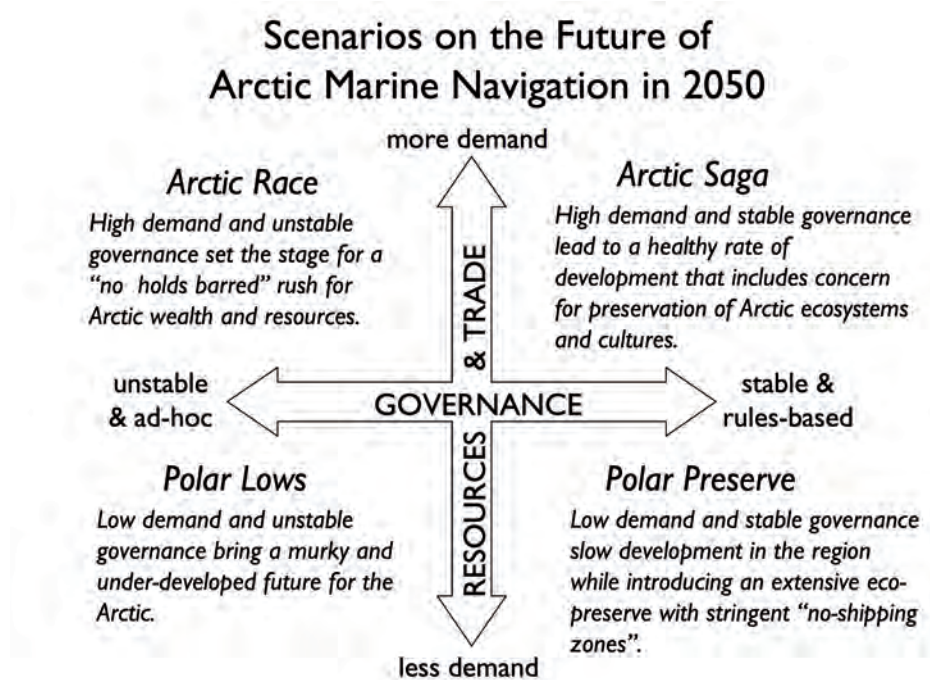


Fig. 6: Scenario framework for the Arctic Marine Shipping Assessment of the Arctic Council.

AMSA scenarios creation effort is an awareness of the great complexity associated with an Arctic transport system and the multi-faceted factors influencing future Arctic marine use.

ARCTIC STATE CHALLENGES

The arrival of the global maritime industry in the Arctic and the rapid growth in multiple uses of the Arctic Ocean are bringing many new actors and non-arctic stakeholders to the region. Many of these players are experiencing for the first time the realities and challenges of the Arctic marine environment, as well as an overall lack of support infrastructure normally associated with marine operations in the lower latitudes. All of these new marine activities require serious, sustained investments by the Arctic states in such basic support as hydrography, charting, ports, communication systems, sea-ice monitoring, search and rescue, and incident response. The list of critical and lacking infrastructure is quite lengthy, and these fundamental support issues are being assessed in AMSA. The Arctic states will also require significantly enhanced monitoring and surveillance, and improved mechanisms for the sharing of maritime data and information. Without these tools and multi-lateral collaboration, it will be very difficult to improve upon the current situation with regard to marine environmental

protection, marine safety and sustainable development. In a broader pan-Arctic perspective, a greater sharing of maritime information among the Arctic states would hopefully result in improved regional security and response.

The Arctic states must work closely with the International Maritime Organization (IMO) to develop refined and potentially mandatory Arctic ship design and construction standards; a renewed emphasis on regulations to reduce and limit discharges and stack emissions in all Arctic waters will also require proactive consultation. To further enhance Arctic marine safety and environmental protection, new guidelines and mechanisms for improved mariner training and certification for navigating in Arctic waters should be addressed in the near-term. The establishment of IMO-sanctioned vessel traffic-lanes in Arctic coastal waters such as the Bering Strait, a region of increasing, multiple marine uses, is a plausible requirement some years in the future. Furthermore, a unique

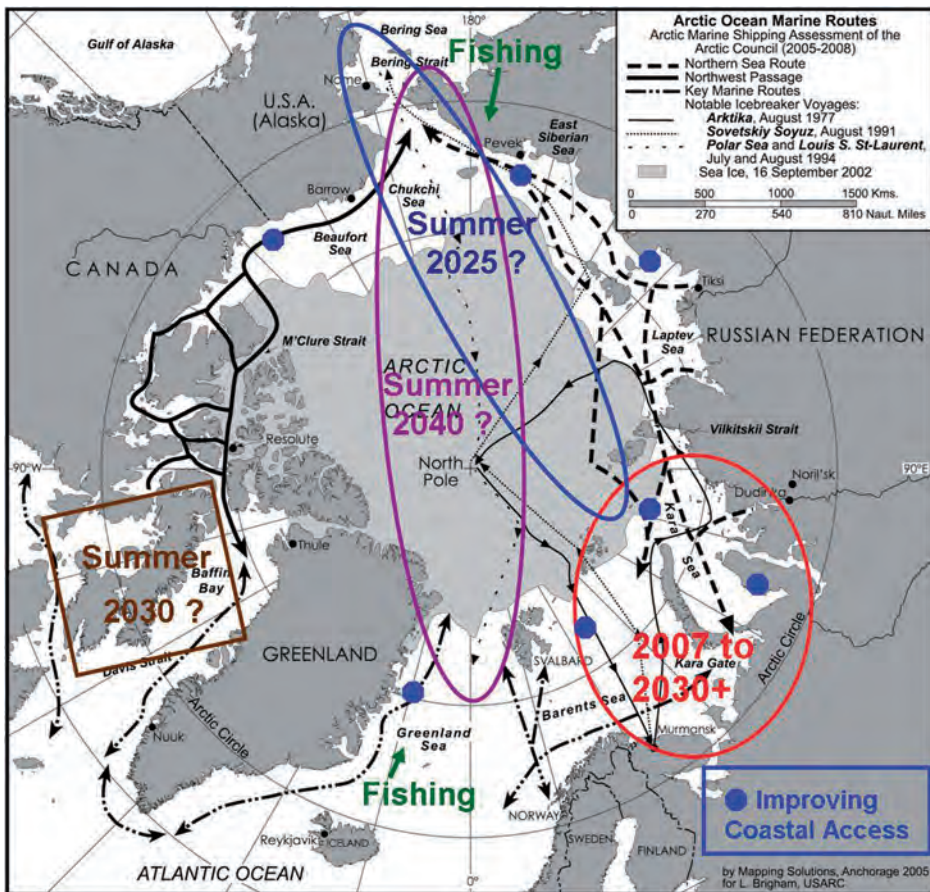


Fig. 7: A futures map of the Arctic Ocean showing plausible marine uses and routes to 2040. Fishing is indicated as moving northward. The most intensively developed region is in the Barents Sea with significant Norwegian and Russian offshore development during the next three decades.

challenge confronts the Arctic coastal states – working out simultaneously the above, critical environmental protection and safety issues at IMO, while continuing to exercise their rights and claims under Article 76 of the UN Convention on the Law of the Sea (the process of establishing their rights to an extended Arctic continental shelf off their shores). The policy implications and possible security issues that surface during these unusual circumstances should test Arctic diplomacy to its core.

The Arctic states will also require a commitment to a level of maritime enforcement that has not previously been needed in the Arctic Ocean. The Arctic coastal states, individually and collectively, will require an on-scene capability to meet both summer and winter contingencies. Whether this enforcement is realized by each of the coastal states operating independently, or by collective arrangements and engagement, is one of the key challenges in the circumpolar North.

While there remain significant uncertainties in the timing and levels of future Arctic marine activity, more communication and cooperation are surely required among the Arctic states to lessen regional disputes and develop a more integrated approach to marine issues. Importantly, the Arctic states must also engage with an array of non-Arctic states, global institutions and indigenous organizations that have expanding roles in the future of Arctic Ocean use. Cooperation and engagement are more relevant and necessary today than at any period in Arctic maritime history. Perhaps the work of the Arctic Council with AMSA and the ongoing International Polar Year led by the international scientific community can provide the experience and common efforts that can influence the evolution of a more secure and safe Arctic Ocean and its people in the twenty-first century.

FISHERIES INSPECTION AND ENFORCEMENT

— AN INTRODUCTION

by Dr Geir Hønneland, Senior Research Fellow, the Fridtjof Nansen Institute⁸

The issue of fisheries inspection and enforcement can be approached from various angles. From a legal point of view, one may ask about the legal basis for inspections and other enforcement measures in a certain area of ocean. On a practical level, one may ask how inspections best can be performed to detect any violations of fisheries regulations. My own background is enforcement in fisheries from a social science perspective. Here, the concept of enforcement is closely linked to that of compliance. The ultimate question is: how can we make fishermen comply with the law? What other mechanisms are at work, and what has to be left to enforcement measures? In the following, I shall provide a brief overview of how compliance can be understood from a social science point of view, focusing on two main compliance mechanisms. Then I shall provide some reflections about compliance in the Barents Sea fisheries. I wrote my PhD about compliance in the Barents Sea a decade ago based on an investigation of fishermen's behaviour in the early 1990s. Since then, I have followed developments in the bilateral fisheries management regime between Norway and Russia closely, and I think there have been some changes in fishermen's attitude to regulations in this sea over the last decade.

THE STUDY OF COMPLIANCE

Compliance and law enforcement have been objects of study mainly within the fields of economics, criminology, psychology and sociology. In economics literature, the theme dates back at least to the work of Adam Smith, who noted that individuals acting in the pursuit of self-interest can cause harm on others and should thus be restricted in some way. He also made the link between crime and economic circumstances, and claimed that individuals most often resort to criminal activity when the opportunities of having a lawful income are not good. This approach has been adopted by Jeremy Bentham, who argues that criminal

8 Further reading: Hønneland, Geir, "Compliance in the Fishery Protection Zone around Svalbard", *Ocean Development & International Law*, no. 29, (1998): 339–360; "A model of compliance in fisheries: theoretical foundations and practical application", *Ocean & Coastal Management*, no. 42 (1999): 699–716; *Coercive and discursive compliance mechanisms in the management of natural resources: A case study from the Barents Sea fisheries* (Dordrecht: Springer, 2000); *Kvotekamp og kyststatssolidaritet: Norsk-russisk fiskeriforvaltning gjennom 30 år* (Bergen: Fagbokforlaget, 2006).

behaviour is economically rational, and he develops the concept of *deterrence* to reduce crime.

In the early twentieth century, there were numerous attempts to explore the link between crime and economic circumstances, but it was not until the late 1960s that a formal theoretical framework for explaining criminal activity was developed. Following Smith and Bentham, Gary Becker argues that criminals behave basically like all other individuals in attempting to maximize personal utility. According to the model, an individual commits a crime if the expected utility from doing so exceeds the utility from engaging in lawful activities. In contrast, recent research in psychology and sociology emphasizes the importance of factors such as *socialization*, *morality* and *legitimacy* in bringing about compliant behaviour. In psychological and sociological literature, compliance is linked to both the *internal capacities* of the individual and the *external influences* of the environment; the socialization process is the linkage between the individual and society. The two perspectives – the economic on the one hand and the psychological and sociological on the other – are often called the *instrumental* and *normative* perspectives.

SOURCES OF COMPLIANCE AND COMPLIANCE MECHANISMS

In social science literature on fisheries management, various sources of compliance have been singled out:

First, there is *self-interest*: Compliance sometimes follows as the preferred option of fishermen even in the absence of external influence. Subjects may simply conclude that the expected value of compliance outweighs that of violation.

Second, *enforcement* involves explicit attempts by authorities to manipulate the cost/benefit calculations of the subject, primarily through the threat of sanctions in the event of detected violation.

Third, fishermen's actions may be shaped by *social pressure*, stemming from external actors other than the public authorities.

Fourth, their choices and actions may be influenced by an explicit sense of *obligation*, of either internal or external origin.

Fifth, the decisions of subjects concerning compliance vs violation are often influenced by subconscious or unconscious considerations; the terms *habit* or *practice* may be used to refer to patterns of behaviour mainly acquired by frequent repetition.

Sixth, *conviction* refers to situations in which fishermen are convinced by the arguments of public authorities.

In addition, *biological conditions* and *the nature of the regulations* can be added to the list.

Some sources of compliance cannot be manipulated by public authorities, while others can. This gives rise to the concepts of first-order compliance and

management-induced compliance. Biological factors and social pressure are not easily manipulable by the public authorities. Obligation and habit can be manipulated, but only over a long period of time. Enforcement and conviction are the sources of compliance that are easiest to manipulate.

Compliance mechanisms are the instruments at hand for the public authorities to encourage compliance. The instrumental perspective of compliance tends to view enforcement as the primary source of compliance. While the other sources would also be recognized as instrumental in forming decision-making in individuals, these are either conceived of as unmanipulative (biological factors and social pressure) or basically inefficient (obligation, habit and conviction). *Coercive measures*, i.e. the use or threat of power, is the only reliable mechanism to implement management regulations.

The normative perspective, on the other hand, would claim the effectiveness of *discursive measures* to induce compliance. An emphasis on *legitimacy* is a common denominator in this perspective. Individuals feel *obligated* to comply with prescriptions that they perceive as legitimate. They can be *convinced* of the reasonability of the regulations through argumentation. In a long-term perspective, *habit* can also be influenced in the same way.

MANAGEMENT LEVELS AND SUBSYSTEMS OF COMPLIANCE

A compliance system consists of three elements: a *primary rule system*, a *compliance information system* and a *non-compliance response system*. The primary rule system consists of the actors, rules and processes meant for the regulation of subjects' behaviour. The compliance information system embraces the actors, rules and processes that collect and analyze information regarding violations and compliance. The non-compliance response system consists of the actors, rules and processes which govern the responses undertaken to induce compliance in subjects revealed as violators by the second subsystem.

In fisheries management, the primary rule system comprises all *actors* involved in the making of rules regulating the fishery, the *regulations* themselves and the *processes* through which they are made. Normally, this covers fisheries research and the regulatory level. The compliance information system basically comprises the level of checks of a fisheries management system. Checks can be conducted both at sea (during the fishing) or on shore (when the catch is landed). Furthermore, checking measures can be separated into a *passive* and an *active* part. Passive checks refers to the examination of the information fishermen are obliged to submit about their activities at sea; authorities passively receive data from the vessels and examine whether they provide evidence of lawful behaviour or not. Active checks involve the physical checking by inspectors of this information, either at sea or on shore. The non-compliance response system is found partly at the level of checks, but primarily at the prosecution level of a fisheries

management system. It basically involves imposing sanctions on those that have been detected to be in violation.

The coercive measures prescribed by the instrumental perspective on compliance are generally found at the lower end of the compliance system, i.e. within the compliance information and, most importantly, the non-compliance response system. Theorists within this perspective would argue that fishermen will comply only if the possible gains to do so outweigh those of violating the regulations. This implies that the perceived probability of being detected to be in violation is sufficiently high and that sanctions are sufficiently severe to make violations unprofitable. The basic coercive measures applied to make detection seem probable include *extensive surveillance* and the use of inspectors that are sufficiently *competent* and *willing* to reveal violations. If inspectors are not adequately prepared for their task of revealing violations, high frequency of inspection is of little value. The same is true if inspectors are not motivated to report the violations they detect. There might be a conflict between these two objectives. For instance, inspectors who themselves have a background from fisheries will often be highly qualified for detecting violations, but also identify with the fishermen and understand their need to circumvent the rules occasionally.

The discursive measures prescribed by the normative perspective include efforts at all levels of the management system to increase the legitimacy of regulations, the actors that have produced them, and the procedures through which this was carried out. Most studies of fisheries management systems conducted from a normative perspective have focused on the primary rule system, i.e. on how the participation of fishermen in the bodies that produce the regulations can increase the legitimacy of the regulations, the enacting body and the applied procedure. A growing interest can also be observed in fishermen's attitude to research institutions and procedures. However, in addition it is essential to include the discursive elements of the compliance information system and the non-compliance response system. The hypothesis is that compliance is increased when control and the prosecution authorities are perceived as legitimate by the fishermen.

There is every reason to believe that actual compliance cannot be explained by one factor alone. Different sources and mechanisms are activated in different situations and sometimes operate simultaneously. One may assume that a combination of obligation, habit and conviction is at work in situations in which discursive measures prove effective. And the delimitation between first-order and management-induced compliance is not always obvious. When fishermen have little to gain by violating a certain regulation, when they know that sanctions are possible, but not probable, or when they perceive the regulations as neither particularly legitimate nor illegitimate, it may be difficult to discern the various explanations from each other.

COMPLIANCE IN THE BARENTS SEA FISHERIES

In my own investigation of compliance in the Barents Sea fisheries in the early 1990s – based mainly on violation statistics from the Norwegian Coast Guard – I came to the conclusion that most fishermen comply with most regulations most of the time. This is often forgotten since the media tend to focus on the exceptions to this main rule.

Further, I tried through in-depth interviews with Norwegian and Russian fishermen and representatives of their organizations to find to what extent the observed compliance can be understood as first-order compliance, and to what extent as the result of coercive or discursive measures from management and enforcement authorities. There is not time to go through the conclusions of the study here, but I would like to mention one finding, namely the correlation between the communicative efforts made by coast guard inspectors in the Fishery Protection Zone around Svalbard, where coercive measures were not yet in use at the time of the investigation, and the high degree of legitimacy enjoyed by the Norwegian Coast Guard from both Norwegian and Russian fishermen. The most striking examples were the attempts to avoid killing undersized ground-fish, such as cod, while fishing for capelin and shrimp, during which small-sized nets are used. Normally, coast guard inspectors would board the fishing vessels, present the captains with their calculations of how much undersized fish had been caught, and attempt to convince them to stop fishing in that particular area. Almost always, this strategy succeeded. It might take several days of argumentation, but then the entire Russian fleet, often consisting of a several dozen ships, would leave the area. The challenge of coast guard inspectors to induce compliance without resorting to coercive measures was facilitated by the fact that the coast guard was much more than an enforcement body to the fishermen. Above all, coast guard vessels serve as rescue boats in the Barents Sea. They can also offer several other services ranging from medical assistance to transportation and ice breaking. These services are all free of charge to the fishing fleet, and they may contribute to a certain feeling of obligation to the control body. This may especially be the case in the Svalbard area, where climatic conditions are harsh and the presence of other auxiliary bodies more limited than closer to the mainland. This may also influence the relationship between fishermen and inspectors. Fishermen may be more obedient to the inspectors' instructions because they generally want to be on good terms with the coast guard.

However, rather than stressing the fishermen's possible sense of obligation, one may accentuate the *spontaneous spirit of community* that may arise between people who carry out their professions in these remote areas, regardless of their functions and roles. The very remoteness along with the extreme climatic conditions can make such roles less important here than in many other situations of human interaction. When inspectors and fisherman meet in the polar night and

discuss over a cup of coffee when the ice will come in from the east, the situation is closer to a meeting between polar sea colleagues than to one between a watchdog and a potential criminal. In such a situation, it may be argued, it becomes particularly awkward for the captain to be revealed as a violator, or come across as non-cooperative by turning down a request from the inspector.

The situation has probably changed since the early 1990s. In 1994, the first arrest was carried out in the Fishery Protection Zone around Svalbard. Icelandic vessels had started fishing in the area without having quotas in the Barents Sea. This is a far more serious violation than fishing undersized fish or with smaller mesh sizes than permitted, and Norway had to react. The first and so far only arrest of a Russian vessel in the Svalbard Zone took place in 2001, and the official Russian reaction was severe. The arrest was a violation of an old gentlemen's agreement between the two countries, was the Russian perception. By the late 1990s, the Russians felt that they were being discriminated against by the Norwegian Coast Guard. The Norwegian perception was that we are becoming better at discovering violations. There is also little doubt that Russian violations have increased over the last decade. Norwegian authorities claim they can document that Russia has overfished its cod quota in the Barents Sea by some 50 per cent almost every year since the early 2000s. In this situation, coercive measures cannot by and large be used by the Norwegian authorities. Norway can punish a Russian vessel for underreporting if the coast guard discovers that the vessel has more fish on board at the time of inspection than it has reported in the catch log. But the Norwegian authorities cannot punish a Russian vessel for overfishing its annual quota (Russian vessels do not even have quotas, as quotas are distributed at company level.) That has to be left to Russian authorities. The Norwegian perception is, although it is probably not stated explicitly by the Ministry of Fisheries, that the Russians are not that keen on detecting violations. It is also problematic that fines are generally low in Russia. The coercive measures simply do not work. At the same time, the potential for fruitful discursive measures has also been reduced as the relationship between the Norwegian coast guard and the Russian fishing fleet has soured. On top of that, the legitimacy of the regulations is diminished in the eyes of Norwegian fishermen when they see that the Russians can overfish their quotas by a large margin without being punished. In a global context, the Barents Sea fisheries still count among the more well-managed. But reduced compliance is a huge threat at the moment.

FISHERIES INSPECTION AND ENFORCEMENT

by Rear Admiral Trond Grytting, Commander Regional Headquarters North Norway

The Norwegian military is present in the North to support Norwegian policy on safety and security.

My command, Regional Headquarters North Norway, is a “Crisis Response Command”. One of my tasks is to survey vigilantly the enormous areas in and around Northern Norway that are of profound importance in terms not only of Norwegian interests, but also values. The military is ready to support the efforts of the Norwegian authorities to meet a whole range of challenges emanating from a complex risk picture. This includes civilian catastrophes and disasters, danger caused by heavy oil-transport vessels, nuclear accidents, terrorism, organized crime, foreign military activity, resource crime, resource conflicts and border disputes to mention but some. The environment, oil, gas and fish are all defined as strategic resources in the High North. My command has a responsibility to support efforts to protect these resources.

The Norwegian coastline is approximately 2,500 km long, and the maritime area under Norwegian jurisdiction represents an area equal to seven times mainland Norway. The sea is divided into different zones. In addition to internal waters and the Exclusive Economic Zone (EEZ), there is the Fishery Zone surrounding Jan Mayen, and the Fishery Protection Zone surrounding Svalbard. When it comes to fisheries, however, these are regulated in the same way and have the same legal basis as the EEZ. International waters of specific Norwegian interest are the “Loop Hole” between the Norwegian and Russian EEZ, and the “Banana Hole” between the Norwegian EEZ and the Fishery Zone of Jan Mayen.

In the following, I shall give you a brief historical account of the development of fishery enforcement at sea. I shall also give you an overview of the organization and practices of Norwegian fisheries inspections and enforcement, as well as our challenges and future perspective.

HISTORICAL ACCOUNT

Dramatic confrontation between the Norwegian Coast Guard and pirate fishermen started in 1993 when the trawler *Zaandam*, registered in the Dominican Republic, started fishing in the Fishery Protection Zone around Svalbard. *Zaandam* did not comply with orders to stop fishing, claiming her right to fish by referring to the Svalbard treaty. What should the Norwegian reaction be? Arrest the trawler and tow it to the mainland for prosecution? Cut the trawl or by

other means force the trawler to comply with orders to stop fishing and leave the Zone? A political decision was issued through the coast guard's operational chain of command. *Zaandam* did not comply with orders and so Coast Guard Vessel *Senja* fired a warning shot. This was the first shot ever fired in the Fishery Protection Zone around Svalbard.

Confrontation between nations and fishery organizations is nothing new. On the contrary, the application of various means of force and diplomatic crisis management has often proved necessary. Iceland experienced success cutting trawler wires during the 1970s. The same success was achieved by Norway in the Fishery Protection Zone around Svalbard in 1994, when some 25 trawlers refused to comply with orders. The 1994 case of a trawler registered in Belize is a good example of dramatic Norwegian fishery enforcement. The trawler tried to use its door to ram the coast guard. Later the crew on the trawler fired a shotgun towards coast guard personnel in a light boat. The trawler did not comply even after warning shots had been fired. The situation was not brought under control until a cold grenade was fired into the hull of the trawler.

UNCONTROLLED FISHING AND SUSTAINABILITY

Today, several coastal states are faced with close to ruined fisheries and a tragic situation for the coastal people dependant on the fish. They are the victims of a possibly lost battle against uncontrolled fishing. These places had rich fisheries until their collapse, mostly in the 1990s. Around the globe we can find many examples of overfishing and lost battles against resource crime. I would therefore emphasize the importance of strict and firm fishery enforcement. It is in our common interest to decrease illegal fishing to preserve fish stocks for the future. The consequences of not succeeding will be dramatic.

Fish is a strategic resource. Some of the most valuable stocks in the world are found in the North Atlantic and the Barents Sea. Scientific research and sound management have ensured that these stocks are still sustainable. The most serious threat to the fisheries of the North Atlantic today is illegal, unreported and unregulated fishing (IUU fishing). IUU fishing is not only related to convenience flag vessels – a trawler from any nation could be involved. IUU fishing could lead to stocks being severely depleted. Estimates indicate that 100,000 tons of cod are caught illegally in the Barents Sea alone each year. This represents one fourth of the total allowable cod catch. Quotas for legal fishing have thus, to some extent, been reduced as a result of illegal fishing.

ORGANIZATION

Several Norwegian ministries are actively engaged in meeting these challenges. Primarily it is the responsibility of the Ministry of Foreign Affairs and the Ministry of Fishery and Coastal Affairs to negotiate with other nations and organi-

zations on rules and regulations. The control regime is very complex, ranging from agreeing on quotas via inspections at sea to inspections of the landing of catches.

The Norwegian Coast Guard is the prime authority for fishery inspections at sea, regulated by the Coast Guard Act of 1997. The Norwegian Coast Guard has, over recent years, carried out approximately 2,300 fishery inspections every year, on average resulting in more than 350 warnings, reports and arrests annually. The actual crime committed by the captain of a trawler and his company is a matter for the Norwegian police and prosecution authorities when the trawler has been brought in to a Norwegian port. Our coast guard has police authority in accordance with the Coast Guard Act of 1997 and has established cooperation lines with the police and prosecution authorities to ensure that arrests, securing evidence and any handover to the relevant authorities for prosecution is properly handled.

The majority of nations have a coast guard responsible for monitoring fishing at sea. However, the coast guards are organized differently. Some nations have a purely civilian coast guard, while others have tasked the regular navy with carrying out fishery controls. In Norway, the coast guard is a part of the military structure regulated by the Coast Guard Act. The Norwegian Coast Guard's resources are primarily a fleet of vessels which, for the time being, is going through a considerable modernization programme. In addition, the organic helicopters are soon to be replaced by the very capable NH 90 helicopters. The maritime P3 Orion aircraft has also proved to be a very important asset supporting coast guard operations. The presence of the coast guard is, in itself, very important. Presence has a preventative effect discouraging illegal activity, including illegal fishing. The coast guard is also supported by the general military command, control and surveillance system. Today, the actual development and competence of the Norwegian Coast Guard is the responsibility of the Commander of the Coast Guard and his staff in Oslo. He reports to the Chief of Staff, Royal Norwegian Navy. The actual tasking of coast guard vessels in the north is the responsibility of the Commander Coast Guard North from his base and headquarters in Sortland. The operational control of all operations conducted by the coast guard in the north is my responsibility and my crisis response headquarters, Regional Headquarters North Norway, at Reitan outside Bodø.

PRACTICES

Each coast guard commander operating his ship at sea has the responsibility and authority to exercise Norwegian authority in a vast number of areas. When it comes to controlling fisheries, primary authority is vested in the commander of the coast guard vessel. The actual way the coast guard crew do their job during fishery inspections is very important. Fishermen from all countries expect these

inspections to be carried out fairly. The coast guard captain has a responsibility to tackle various challenges, including threats from an unwilling trawler crew. His greatest responsibility is the application of necessary and proportionate force. He will, as required, consult the relevant prosecution authorities as well as receive appropriate authorization for the application of force via the coast guard operational chain of command.

According to the Norwegian Directorate of Fisheries, vessels flying a flag of convenience involved in IUU fishing have more or less disappeared from the Barents Sea. I understand this is mainly due to the efforts of the Norwegian fishery administration and organizations, good cooperation between several nations, efforts by international organizations like the North East Atlantic Fisheries Commission (NEAFC) as well as an effect of the operations that the Norwegian Coast Guard has carried out in the Barents Sea.

CHALLENGES

There are still a lot of challenges in fighting IUU activity. Many shipowners conduct calculated and organized crime, specializing in illegal fishing. Why? Because there is a lot of money involved. How can IUU activity still be possible? This is of course a complex question, but I will focus on two main factors: cooperation and legal authority. Cooperation has two dimensions – national and international. In many countries, including Norway, there are various ministries and authorities with overlapping interests and responsibilities. I believe that progress can be made if the different national authorities cooperate better. Internationally it is necessary for the different nations to cooperate even better. Cooperation has improved during the last few years, but it can be yet more efficient.

A good example of this is the operation that the Norwegian Coast Guard carried out against the vessel *Castor* last year. *Castor* was illegally flying the Russian flag in the Russian EEZ and was taking onboard the catch from another Russian trawler. The Russian Coast Guard requested assistance from the Norwegian Coast Guard as *Castor* was in transit westwards through the Norwegian EEZ. *Castor* was caught and handed over to the Russian Coast Guard. This cooperation is a result of good relations on both sides of the border. It is also important that the different nations improve the sharing of information on fishery-related issues, such as tracking information.

Regarding legal authority, it is important that we fully use the already existing regulations and that we are able to work together to create new regulations and agreements and improve the existing ones. The North East Atlantic Fisheries Commission is an important organization, but it still has its weaknesses. NEAFC does not regulate all species of fish. Cod is for instance not included, despite being the most important species found in the Barents Sea.

Today's regulations in many ways protect shipowners. It is almost impossible to gain access to documents that will unveil who is behind the shipping companies. They can move on and form new companies. This makes it easier for the criminals to hide behind regulations, documents and bureaucracy. We have a challenge here. It will be easier to decrease illegal fishing if we are able to identify the people behind the companies.

It is not only the coastal nations that are affected by these problems. If fish stocks disappear, this will have a global impact. Therefore, we must aim to get even more focus directed on these issues to make people more aware of the problem and to act accordingly.

It is necessary to develop and use the existing rules and regulations. For instance, last year we had a case with the trawler *Joana*. She was fishing in international waters inside the "Loop Hole" and not flying any national flag. She was boarded, inspected, arrested and handed over to the prosecution authorities in East Finnmark. This is the first time a boarding to determine the nationality of a vessel followed by an arrest has ever been conducted in international waters by Norway. The United Nations Convention on the Law of the Sea was the legal basis for the boarding. Once it had been determined that the vessel was stateless, it fell under Norwegian domestic law, and was prosecuted as a Norwegian.

I believe that all flag states have to accept that coastal states will take action against illegal fishing. On the other hand, coastal states should be more on the offence in taking action against illegal activity. We cannot allow ourselves to be drawn into a situation in which a coastal state declines to take action for fear of the flag state's reaction. Improved cooperation and better and more efficient communication between governmental officials can prevent this. Flag states must also improve their efforts when it comes to reacting against its ships when, for example, the coastal state provides evidence of a fisheries crime.

Norway will continue to develop the legal basis for coping with illegal fishing activity, both in areas under Norwegian jurisdiction and international waters. This is to take advantage of the legal authority granted by the Law of the Sea Convention. Moreover, I also believe that Norway will have to turn to the Law of the Sea Convention to meet the serious threats to the environment the world is facing, both generally and specifically in the North.

CONCLUSIONS

Having offered these perspectives as I see them, my conclusions are as follows: IUU fishing is a strategic challenge; it is much more than "chasing a criminal down the road". It is vital that we give our coast guard optimal working conditions and it is vital that all the various ministries, authorities and organizations, both national and international, manage to think and work cross-sectorally. To prevent fishery conflicts escalating, it is vital that the coast guard appears strict,

firm and just. The coastal and flag states must stand firm in terms of the rights and obligations that they have and avoid escalation. However, fundamentally and ideally, good results in the Barents Sea should be achieved through cooperation and mutual respect between nations complying with international agreements and law.

The Norwegian military is present in the north to maintain sovereignty, protect interests and the rights and responsibilities of Norway as a coastal state. The vast areas of the north are watched over every day to maintain situational awareness. The foremost aim of the military is to secure interests and prevent war. On a daily basis numerous peacetime tasks are conducted ranging from tracking oil tankers to developing much needed relations with Russia to safeguard the rich fisheries that remain a strategic resource.

ENERGY SECURITY IN THE ARCTIC REGION

by Evgeniy Kozhokin, Director, Russia's Institute for Strategic Studies

INTRODUCTION

Energy security is a short-hand term that embraces the political and policy implications associated with regional and global energy markets, as well as the more ordinary business aspects of the energy sector such as increasing energy supply, managing demand, fostering technological development, raising capital, managing risk, increasing return on investment, establishing environmental and fiscal regulatory frameworks, and responding to price volatility. Pursuing energy security has implications for a variety of policy areas, including economic and environmental sustainability, the free flow of investment, robust research, the development and deployment of technology, energy efficiency and conservation, the physical security of energy infrastructure and transit corridors, and even poverty reduction through economic development.

Nowadays we do not treat the problem of energy security as one purely of resources. The other key dimensions – technological, social, and even humanitarian – have also appeared on the agenda.

Energy security is not just about securing supply. In this context a model of sharing risks is becoming an efficient tool for future development. One of the implementation options for such a model could be cross stock-holding in the upstream companies of supply countries, and in the midstream and downstream companies of customers.

According to the International Energy Agency (IEA), current reserves levels and related investment financing are considered sufficient to meet oil and natural gas needs until 2030. The IEA is openly concerned, however, that projected future energy trends may not be sustainable in terms of both energy resources and environmental impacts.

A GROWING ROLE OF POLITICS

There are claims that the role of politics is growing in energy-related issues. I doubt this is the case. The mass media continues to debate the interruptions of gas supplies to the Ukraine and Belarus. But everyone may remember the fact that on 21 May 2004, the EU Trade Commissioner Pascal Lamy and the Russian minister of economic development and trade, German Gref, signed the agreement concluding the bilateral market access negotiations for the accession of the Russian Federation to the WTO. The agreement, which was never made public, has solved a range of issues related to energy trade, in particular the one concerning the domestic price for industrial gas users. The agreement contains

a commitment that the price of gas for industrial users should cover the costs, profits and investments required for development of new fields. Russian gas prices for industrial users, fixed before, will be increased gradually from the current level (as of mid 2004) of \$27–28 per mcm, to between \$37–42 per mcm by 2006 and \$49–57 per mcm by 2010. Increased domestic energy prices will encourage the more efficient use of energy resources in Russia and thus also support the Kyoto goals.

Gazprom and its subsidiaries sold about 307 bcm of gas to Russian customers in 2005. In Russia, prices for gas produced and sold by Gazprom and its subsidiaries are set annually by the State Federal Tariffs Service (FTS). Gas tariffs are different for different price regions. There were seven price regions before 2005, and there are 13 of them since 1 January of 2006. Wholesale gas prices increased by an average of 23 per cent in 2005. Therefore the average sales price of Gasprom gas became 1014.1 RUR per mcm (\$35.5/mcm) (excluding VAT). This price increase had been reflected in both federal and regional budgets. The increase in wholesale gas prices in 2006 was on average 11.9 per cent. The 2007 prices were introduced by FTS order no. 338 – /1 of 5 Dec 2006. They increased 15 per cent compared to 2006 prices.

Here we can talk about the planned and systematic policy of gas price increase on the domestic market. An increased gas price on the domestic market in Russia unavoidably entailed price increases for gas sold to partners in the CIS. This is well known in Kiev and Minsk. Nevertheless the leadership of Belarus and Ukraine tried to achieve the unachievable by continuing to believe that for Moscow political considerations would be stronger than economic fundamentals, and that Russia would dump its gas. In this case Russia had selected economic pragmatism instead of a political clientele approach. It is thus strange that the West seems to prefer the latter approach and severely criticized Russia for refusing to adopt a political clientele policy. This is particularly odd given that the EU so clearly insisted on an increase of gas prices in Russia.

ARCTIC RESOURCES

The issue of huge untapped reserves in the Arctic is on the top of the oil and gas development agenda. Significant technical and exploration efforts, supported by sufficient funding, are required to transfer potential reserves to proven and probable categories. Despite the continuous media discussion about the Arctic shelf's huge petroleum potential, we should not forget that most of the Arctic remains unexplored, untested, and unevaluated. Enormous hurdles must be overcome to produce oil and gas in the Arctic. It is important, for instance, that safe and efficient subsea technology, which can be implemented underneath pack ice, be further developed to operate safely.

A reasonable, overall approach and technically feasible programmes still need to be developed for the exploration of the East Arctic continental shelf, especially in the Chukchi and East-Siberian seas. These are among the least explored parts of the Russian continental shelf, and of the world as such. Geological models of this part of the Russian Arctic are still not well developed and cannot produce precise evaluations of reserves. Moreover, the climatic conditions on the East Arctic shelf are extremely difficult for exploration. For example, the ice-free period is very short.

New oil and gas production centers will be built on the basis of future explorative drilling. A licensing programme in this part of the Arctic shelf is now being implemented. Geological licenses are of particular importance to start the search for, and prove the existence of, petroleum deposits on a scale that makes it economical to develop them further.

The main characteristics of the allocation of hydrocarbons on the Russian Arctic shelf can be described based on available research: gas prevails in the resources of the Barents Sea itself (not including the Pechora Sea); oil fields can be found on the peripheries of the Eastern Barents, which includes the largest, eastern part of the Russian sector of the Barents Sea, and perhaps the South Kara zones. This last conclusion is based on a theoretical model and has yet to be proved by explorative drilling.

The remainder of Russia's extensive part of the Arctic shelf, including the northern regions of the Kara Sea, has not been covered by extensive geological or geophysical research. This sector requires more research, including the drilling of deep wells, to update the existing model of its geological structure and re-estimate the oil and gas potential of this huge region.

It is worth noting that even the area of the Barents Sea has white spots. According to the former Norwegian minister of petroleum and energy, Mr Odd Roger Enoksen, the Norwegian sector of the Barents Sea is the least developed part of the Norwegian continental shelf.⁹ By the spring of 2006 only 63 wells had been drilled. The first commercial fields are the gas field Snow White and the oil field Goliath.

In general, we need to be very cautious when listening to the assessments of Arctic resources used by the media and politicians. Currently these have not yet been confirmed by full-scale geological exploration efforts.

VULNERABILITY

One of the major concerns linked to the development of the petroleum sector in the Arctic is the extreme vulnerability of the Arctic's unique ecological systems. There are fears that severe local environmental impacts will inevitably result

9 *Oil of Russia*, no. 4 (2006): 109.

from a massive expansion of the oil and gas industry. To date, the world does not have absolutely safe technologies for gas and oil extraction.

Norway has one of the world's best safety records with no big accidents in two decades. However, a 1977 blowout spewed out 12,700 cubic yards of oil at the Ekofisk field. In 1980, 123 people died when a floating hotel for oil workers capsized. Norway uses the safest technology for developing oil and gas industry under the extreme conditions of the North. It seems to be efficient for Russia to use this experience to decrease the risk of accidents during the development of oil and gas deposits in the Arctic.

The US Arctic oil experience has worse statistics. Less than a year after a corroded pipeline ruptured causing the largest oil spill in Alaskan history, BP has continued to implement severe cost-cutting measures at its North Slope facilities, making it vulnerable to another environmental disaster.¹⁰ In March 2006, the worst spill in the history of oil development in Alaska's North Slope forced the closure of five oil-processing centers in the region. Alaskan state officials said that as much as 260,000 gallons (6,100 barrels) of crude oil had leaked from a pipeline in an oil field jointly owned by Exxon Mobil, BP, and Conoco-Philips. The spill blanketed two acres of frozen tundra near Prudhoe Bay – just a short distance from where President Bush has proposed opening up the Arctic Wildlife Refuge to drilling. The oil spill in March 2006 went undetected for about five days before a BP oilfield worker noticed the scent of oil while driving through the area, which led him to believe there was a spill from one of the facilities. BP officials blamed the spill on a corroded transit pipeline.

In this context Frederic Hauge, the president of the Oslo-based environmental organization Bellona, said that “keeping oil and gas out of the Arctic is the single most important thing we can do”. This seems reasonable until the world has developed oil and gas production technologies that are friendly to the fragile Arctic environment.

Now more European banks are signing up to the Equator principles, a set of environmental and social standards for project finance developed by some large US and European banks. This provides a kind of promise that big oil and gas projects will be implemented under strict environmental standards.

RUSSIAN POLICY AND REGULATIONS

The Russian regulatory framework covering the preservation and exploitation of the Russian Arctic resources is being developed. It now includes the *Law on Subsoil*, the *Law on the Continental Shelf*, the *Law on the Exclusive Economic Zone of the Russian Federation*. Furthermore, the *Strategy on Research and Development of the Oil and Gas Potential of the Continental Shelf of the Rus-*

10 Jason Leopold, 25 February 2007, URL: <http://scoop.co.nz/stories/HLO702/S00226>.

sian Federation until 2020 had been adopted. Under discussion are the *Concept of Sustainable Development of the Russian Federation's Arctic Zone*, the *State Strategy of the Development of the North*, and the draft of the law *On the Arctic Zone of the Russian Federation*.

Today's Arctic is one of the ecologically cleanest areas of the world. Consequently, as we consider the security of energy supplies and the rising costs of energy resources development, we should all be concerned about the delicate environment of this region.

THE EXTENDED CONCEPT OF ENERGY SECURITY

by Geir Westgaard, Special Adviser, Norwegian Ministry of Foreign Affairs

In the traditional sense, energy security is about making supplies available, reliable and affordable – and I shall say something about both the availability and the reliability of Norwegian energy supplies. However, much like there is an extended concept of security encompassing both “hard”/military and “soft”/civilian aspects, there is also an extended concept of energy security.

In the globalized world of the twenty-first century, therefore, “old” questions about the availability and reliability of petroleum are interlinked with “new” questions about the acceptability of petroleum due to the costs incurred in both the production and the consumption of oil and natural gas. This affects both security of supply and security of demand. As a consequence, calculations of energy security encompass not only geopolitical factors such as the cohesion of OPEC, the stability of the Middle East and the policies of major players such as Russia, the United States, the European Union, China, India, France and Germany; they also include broader environmental issues, not least climate change and global warming.

But first a note on oil price, whose explanatory power is sometimes overlooked. Take developments in Russia, for example. A low oil price contributed greatly to the collapse of the Soviet Union in 1991. Low oil price also helps explain why Russia hit rock bottom and defaulted on its debt in August 1998. Conversely, a high oil price accounts for much of Russia’s economic turnaround and political comeback over the last seven years.

The reason we are discussing energy security, I believe, is that the high oil price has caused a power shift in international politics. Over the last few years, power has shifted from petroleum importing to petroleum exporting countries. Energy diplomacy aimed at locking in supplies from as many diverse sources as possible has once again become a prominent feature of the foreign-policy scene. For Norway – the world’s third largest exporter of oil and natural gas – this renewed attention to energy is not entirely unwelcome.

THE AVAILABILITY OF SUPPLY

As to the availability of supply, my key messages are as follows:

First, fossil fuels will remain dominant in the energy mix for the foreseeable future. The International Energy Agency estimates that oil, natural gas and coal will account for 81 per cent of overall energy demand in 2030, compared to 80 per cent in 2004. According to the conventional wisdom, moreover, the world is not about to run out of petroleum anytime soon. There is plenty more oil and

gas around, although it is becoming increasingly difficult to access and exploit the remaining resources.

Against this background, it becomes rather illusory to talk about quick fixes to kick the fossil fuel habit or shake the petroleum addiction. The world neither can nor should go “cold turkey” on fossil fuels. Turning off the fossil fuel tap or leaving recoverable resources in the ground is not an option for an energy hungry world, at least not in the short to medium term. If anything, the search for additional petroleum reserves appears to be intensifying.

Second, the importance of Arctic waters in terms of petroleum production is likely to increase. There is considerable optimism about the resource potential of this area, despite the fact that it is relatively unexplored. Some of the optimism is based on estimates, admittedly uncertain, by the US Geological Survey that the Arctic may hold up to a quarter of the world’s remaining hydrocarbons. However, the optimism is also based on actual discoveries and development projects in the Barents, Pechora and Kara seas, such as the Snow White and Shtokman gas fields and the Prirazlomnoye oil field. It is the combined resource potential of Norway and Russia, and the prospects for international cooperation in bringing these resources to world markets, that create excitement about the Barents Sea as an emerging petroleum province.

From a Norwegian perspective, the development of petroleum resources in the Barents Sea also has the potential to transform our relationship with Russia into the kind of strategic energy partnership that President Putin has called for.

Third, Norway will continue to play a significant role in global energy markets. While the North Sea today is considered a mature petroleum province and oil production may have peaked, the resource potential of other parts of the Norwegian continental shelf is still significant. It is estimated that the remaining hydrocarbon resources almost equal what has been produced in Norway over the last 35 years. According to the Norwegian Petroleum Directorate, these resources are split fairly evenly between the North Sea, the Norwegian Sea and the Barents Sea.

Norway today has an oil production of nearly three million barrels per day and an annual gas production of 85 billion cubic meters. Early in the next decade, our gas exports will have risen by 50 per cent to 130 billion cubic meters. This means that exports from Norway will soon account for nearly a third of natural gas consumption in France, Germany and the United Kingdom.

For over 30 years, oil from the Norwegian continental shelf has found its way to US markets. As shipments of LNG from the Snow White field in the Barents Sea to the Cove Point terminal in Maryland have now commenced, there is also a natural gas link between our two countries. This reflects how a combination of technological breakthroughs and high prices is making natural gas more of a global commodity.

THE RELIABILITY OF SUPPLY

Serious supply disruptions are most likely to be caused by accidents, natural disasters or spillover from social turmoil and political volatility in petroleum producing countries. According to some estimates, more than 50 per cent of global oil demand will in 2020 be met by countries that face a high risk of domestic instability. It is not difficult to understand the uncertainty and discomfort that this causes in many world capitals, from Washington to Brussels, Beijing to New Delhi.

Managing this uncertainty is a question of increasing security of supply through diversification, slowing the growth in demand through the promotion of conservation, fuel substitution and energy efficiency, and relying on strategic oil inventory holdings to provide a cushion against possible disruptions in imports or unexpected surges in demand.

In their attempts to diversify supply and mitigate energy security risks, countries of the European Union are looking to Norway because there is both a natural complementarity and strong convergence between us in the field of energy. This sets Norway apart from other suppliers of energy to Europe.

By virtue of being fully integrated into the internal energy market through the European Economic Area (EEA) Agreement, Norway is an “indigenous” producer directly linked to the European gas and electricity grids. We have implemented all the EU *acquis* regulating this market and contribute actively to the development of new policies and legislation.

To help stabilize global energy markets, Norway participates actively in the producer/consumer dialogues under the auspices of both the International Energy Agency (IEA) and the International Energy Forum (IEF). We would maintain some of the key stabilizing elements to be:

- increased transparency and predictability in energy markets;
- predictable and non-discriminatory investment regimes;
- facilitation of secure and affordable access to energy transport networks.

As we see it, the relationship between producer and consumer is often one of interdependence. Energy security is a two-way street. While the consumer is looking for security of supplies, the producer is seeking security of deliveries. The interests of both parties must be taken into account for a stable energy relationship to emerge. This means, for example, that long-term contracts will continue to play an important role in facilitating large upstream investments. Together with short-term, spot and swap contracts to interlock producer and consumer markets, they constitute the backbone of international gas supply security.

The reality of interdependence generally tends to work against producer countries deliberately using energy to exert political pressure on one of their customers. Norway has always resisted the temptation to turn energy into more

of a political or strategic commodity than it already is. We believe that this has served our interests well, solidifying our reputation in global energy markets as a predictable and reliable supplier of both oil and gas.

THE ACCEPTABILITY OF PETROLEUM

Turning to the acceptability of petroleum and, in particular, the environmental costs incurred in the production and consumption of oil and natural gas, I would like to remind you that the Norwegian petroleum industry was born at the time of the first UN conference on the environment in Stockholm 35 years ago and has been well schooled in sustainable development.

Norway introduced a CO₂ tax on petroleum production back in the early 1990s, and today the Norwegian continental shelf is the most energy-efficient petroleum producing region in the world, with CO₂ emissions that amount to less than a third of the global average per unit produced.

One of the challenges we face as petroleum exploration and production expand in Arctic waters is how to maintain the Barents Sea as one of the cleanest, richest and most productive marine areas in the world and a pantry of fish for most of Europe. Norway subscribes to the highest possible standards of health, safety, and the environment (HSE), and has adopted an Integrated Management Plan for the area. The plan takes a measured, step-by-step approach to the development of petroleum resources in the High North. The plan seeks to preserve the ecosystems of northern waters within a framework that allows for coexistence with other economic activities such as fisheries and maritime transport. The plan provides for ecosystem-based management and both presupposes and requires extensive knowledge about the marine environment of the Barents Sea. It is therefore being followed up by large-scale scientific research programs.

There is no denying, however, that while Norway's production of oil and natural gas is relatively clean, it does still contribute to the global climate crisis. With the emergence of climate change as an urgent global political priority, the Norwegian government has signalled that it will lead the charge to mitigate the negative effects of oil and gas production. We have set a double ambition: to strengthen Norway's role as a provider of both energy security and climate security.

On the one hand, we are striving to produce more of the fossil fuels that the world will need in the decades to come. On the other hand, we are seeking to be among the most advanced and committed nations when it comes to minimizing the greenhouse gas emissions from the production and consumption of fossil fuels. Speaking in Oslo in February 2007, EU Trade Commissioner Peter Mandelson said that Norway's approach to energy and climate "sounds like a paradox, but is in fact profound insight."

Paradox or profound insight? It is certainly a dilemma. But Norway's dilemma is also the world's dilemma, and it must be dealt with as such. The relevant questions are not whether measures should be taken, but rather what type, how much and when.

Moving beyond the Kyoto Protocol, we need a framework – internationally agreed upon – within which developing nations can grow, wealthy countries can maintain their standard of living, and the environment can be protected from disaster. We must craft the next climate agreement so that it includes the developing world. To do so, however, we – the industrialized countries – must meet the twin challenges of cutting our own emissions while providing assistance to developing countries so that they can grow without increasing their emissions. We must do so by limiting our own emissions and by developing new technologies that can serve that purpose on a global scale. Norway wants to play a leading role in the international effort to “bend the trends” that are changing the global climate.

Let me sum up the three targets we have set for ourselves:

First, we aim for a 30 per cent reduction of carbon emissions by 2020. Second, by 2012 – the end date of the Kyoto obligations – we have set the target of reducing our emissions by an additional 10 per cent on top of our initial Kyoto Protocol commitments. Third, looking further ahead, our goal is to make Norway carbon neutral by 2050.

A broad set of measures – political, economic and technological – will be needed to reach these goals. The Norwegian experience shows that environmental regulations and taxation can spur technological innovation and make business more, not less, competitive in world markets.

The Norwegian oil industry has demonstrated the ability to integrate new technology that ensures cleaner or more sustainable production and will have to continue on this path if we are to succeed at the Mongstad oil refinery in developing a full scale Carbon Capture and Storage (CCS) project and make a contribution towards “decarbonizing” the global energy mix.

When it comes to climate change, developments in the High North entail both a serious warning and a call to action. Climate change is happening twice as fast here than elsewhere on the globe, leaving no doubt that it is man-made, serious and accelerating, and can only be halted if we act swiftly. To use a metaphor from the fossil fuel business, the Arctic is the canary in the coalmine, and the world must heed its call as broadcast by both the Intergovernmental Panel on Climate Change (IPCC) and the Arctic Climate Impact Assessment (ACIA).

The Arctic is getting warmer and wetter; snow, ice and permafrost are melting; the ocean level is rising and seawater is becoming less saline and more acidic; the ozone layer is thinning and ultraviolet (UV) radiation is increasing.

This could have a series of consequences on people's lives and livelihoods in this part of the world.

- Climate change will alter the flora and fauna of the Arctic. This could make it more difficult to sustain traditional reindeer herding and the living conditions of indigenous peoples.
- Climate change will impact on the location, distribution and migration of fish stocks. This could have significant effects on commercial fisheries. Stocks may move from the coastal jurisdiction of one state to that of another. Other stocks may move outside the jurisdiction of any state, which could complicate sound fisheries management and lead to uncontrolled harvesting.
- Less sea-ice will also increase maritime transport in the Arctic and could open new areas for the development of petroleum and other natural resources.

However, it is the global South that will be most adversely affected by climate change. Hundreds of millions of people could suffer water shortages, hunger and coastal flooding as the world warms up. The fact that the costs of global warming will fall heaviest on those who bear the least responsibility for the current state of affairs also makes climate change a central issue of justice and morality in world politics today. All of which goes to show that the extended concept of energy security – my point of departure here today – can, indeed, be quite extensive.

ICELAND'S SECURITY POLICY AND GEOPOLITICS IN THE NORTH

by Dr. Valur Ingimundarson, Professor, University of Iceland

INTRODUCTION

After the abrupt and unexpected U.S. military withdrawal from Iceland in 2006, Iceland has been facing a new geopolitical reality. Though deeply offended by U.S. unilateralism, the Icelandic government decided against cutting its contractual ties with the United States. The U.S.-Icelandic Defense Agreement, which was concluded in 1951, is still in force, even though it was made to legalize and institutionalize a U.S. troop presence in Iceland. However, Iceland's NATO membership, not the Defense Agreement, is now seen as the cornerstone of the country's security policy. NATO has decided to offer Iceland a limited air policing arrangement from 2008 until 2011, with countries such as France, the United States, Spain, Norway and Denmark offering to contribute to it. At the same time, Iceland has come to formal, though open-ended and non-committal, bilateral agreements with Norway and Denmark on security cooperation. These arrangements are meant to serve peacetime security needs, involving – in the Norwegian case – some temporary military presence and occasional military exercises, search and rescue operations, police training, and the exchange of information. They are mostly about “soft security”, political symbolism, and cooperation between the Nordic NATO members following the U.S. departure. Nonetheless, these steps – which also include formal security discussions with other countries such as Britain, Canada, and Germany – show that Iceland has been forced to rethink its security role independently of the United States. An informal Russian approach to enter into some sort of security dialogue with Iceland along the lines conducted with its Western allies – an approach that the Icelandic government – rather tellingly – chose not to answer – would have been unthinkable before the U.S. withdrawal.¹¹

The U.S. decision to terminate its military presence in Iceland was made before the media spectacle surrounding the “Scramble for the Arctic” had begun in earnest and before the debate about climate change had spilled over into the geopolitics of the High North. Indeed, hot topics such as climate change, ice-melting, access to Arctic natural resources, claims under the Law of the Sea, and

11 Interviews with unnamed Icelandic officials, 7 and 10 September 2007; see also Icelandic Radio Broadcasting Service, RÚV, 8 September 2007, URL: <http://www.ruv.is/heim/frettir/frett/store64/item169099/>.

the prospect of new sea lines of communications in the North – with their potential military ramifications – played no role whatsoever in the bilateral negotiations about the future of the Keflavik base in 2005–2006. One year after the last American soldiers left Iceland after a 55-year old presence, there is a renewed interest in the High North – futuristic in some respects, but with contemporary relevance in others – from some of the same players that made Iceland strategically important during the Cold War.

The key issues, however, have currently as much to do with the ownership and management of natural resources and energy and maritime security as they do with military balance. Yet recycled Cold War discourses are hard to ignore in this context. The recent resumption of an old practice – Russian strategic military aviation – has not only evoked Icelandic Cold War memories of military posturing during the 1980s; it has also added a new twist to the longest running and serious dispute in U.S.-Icelandic relations in the post-Cold War period. A key U.S. rationale for rejecting the Icelandic demand for the retention of F-15 fighter jets in Iceland was that they were a Cold War relic because the Russians were no longer engaged in long-range patrol flights. The Russian bombers have not violated Iceland's airspace and, for this reason, the flights have not been viewed as a military threat. There is, however, uneasiness about them because the bombers have encircled Iceland very close to its airspace. To be sure, in line with standard Western Cold War practices, they have been monitored in the airspace patrolled by NATO. Instead of the Americans, the British, with Norwegian assistance, have sent fighter jets from Britain to shadow them. They have, however, never come near Iceland before returning to their bases, because the Russian bombers have left the area. Whatever the Russian motive, the flights underscore the interplay between symbolic military posturing and the politics of natural resources. Iceland is certainly not on the verge of regaining its former role as a military prize any time soon. But with the huge growth in oil and gas transportation in Icelandic waters in the near future, it is bound to play an increasingly important role in energy and maritime security in the North.

ICELANDIC-NORWEGIAN SECURITY COOPERATION

Of the Nordic countries, the Norwegians have traditionally shown most interest in Icelandic security affairs. During the Cold War, they wanted a strong U.S. presence in Iceland as part of the defense of Norway in wartime and to avoid pressure for the peacetime establishment of American military bases in Norway. The Norwegian government has, of course, made the case that that the High North is regaining strategic importance, less because of state-centered military activity than because of energy shipments from Norway and Russia to the United States. Such transport would pass Iceland and possibly require cooperation within surveillance flights, radar stations, and air defenses. The immedi-

ate Norwegian readiness to enter into bilateral security cooperation with Iceland following the U.S. withdrawal was clearly a part of this strategic thinking.

To be sure, the Memorandum of Understanding (MOU) between Iceland and Norway – which was signed in May 2007 – is a distinctly Nordic product: a cautious, “non-threatening,” and generally worded document. It does not exceed Norway or Iceland’s NATO obligations and has no bearing on the U.S.-Icelandic Defense Agreement. What is more, it specifically spells out that it entails no security guarantee of any sort. Indeed, it says as much about what it is not than what it is.¹² Yet despite its modesty, there is no reason to dismiss its symbolic significance. It has serious undertones because it has to be seen within the framework of the U.S. military withdrawal from the region.

The Norwegians have stated publicly that the MOU is tied to Norway’s High North Strategy – announced in Tromsø in 2006.¹³ According to the Norwegian foreign minister, Jonas Gahr Støre, the main impetus behind this strategy is energy, climate change, and relations with Russia. This policy has also been framed and shaped through interaction with other players and in close cooperation with the other Nordic countries, the EU, and the United States.¹⁴ Thus, one motive for security cooperation with Iceland was to address concerns related to the environment, transport, and resource management. In general, this policy fits well with the Icelandic government’s efforts to emphasize maritime security in the North Atlantic. Yet the two countries approach this cooperation from different angles: Norway is primarily concerned with its contemporary and future oil and gas interests.¹⁵ Energy security serves the purpose of ensuring safe energy transport to destinations in the United States and Europe. To Iceland, however, the vast increase in such shipments presents not only future economic opportunities. Far more important is the question of environmental risks, especially the danger of oil spills which could – in a worst case scenario – result in what the German sociologist Ulrich Beck aptly termed “environmental destruction by affluence.”¹⁶

12 Press Release, “Iceland and Norway sign MOU on security policy cooperation”, 7 April 2007, URL: <http://www.regjeringen.no/en/dep/ud/Press-Contacts/News/2007/mou-2.html>.

13 A speech by Norwegian Foreign Minister, Jonas Gahr Støre, “Perspectives on the Government’s High North Policy”, Bodø University College, 15 March 2007, URL: <http://regjeringen.no/en/dep/ud/>.

14 See Jonas Gahr Støre, “Common opportunities and challenges in the North”, speech in Helsinki, 5 June 2007.

15 See Nina Graeger, “Norway between NATO, the EU, and the US: A Case Study of Post-Cold War Security and Defence Discourse”, *Cambridge Review of International Affairs*, vol. 18, no. 1 (April 2005): 88.

16 On Ulrich Beck’s theory on risk societies see Beck, *Risk Society: Towards a New Modernity* (New York: Sage, 1992); and idem, *Ecological enlightenment: essays on the politics of the risk society* (London: Humanities, 1995).

Thus, Norway and Iceland have shared interests in maritime safety in the North, but these are based on different national premises. What could upset this relationship is if a gap developed between those who are disproportionately afflicted by risks and those who disproportionately profit from them. The Icelandic political elite – apart from the opposition's Left-Greens – has been broadly in favor of increased security cooperation with Norway and Denmark.¹⁷ In fact, the argument has been proposed – ironically by both the hard right and left, though for different reasons – that Iceland is being implicated in a new geopolitical power game.¹⁸ According to the right, Iceland should not pander to Norwegian imperial interests in the High North and continue to rely on the hegemony of the United States and/or NATO as security guarantors.¹⁹ In a post-national age, by the left and to a lesser extent from the right, only half-serious historical references have been made to what was portrayed for a long time in Icelandic history books as Iceland's most humiliating and traumatic experience: the loss of independence by submitting to the Norwegian King in 1262!²⁰

These counter-discourses – one based to some extent on a nostalgic Cold War faith in U.S. military protection and the other on a nationalist reading of a mediaeval foundational myth mixed with contemporary anti-militarist sentiments – do not pose a threat to government policy. Yet, some skepticism has been voiced about Norway's reliability as a security partner and about its natural resource policies, especially when it comes to fisheries management. The same argument can, of course, be made about Iceland from a Norwegian perspective. Iceland's demilitarization does not generate much confidence in mutuality in terms of security contributions (the notion of an Icelandic military or a national guard is still a domestic political taboo). And its fishery policies are certainly not beyond criticism.

Whatever the merits of such arguments, however, the Icelandic government has made it clear that this security cooperation will have no bearing on its position on fisheries and territorial disputes in the High North. This is not to say that Norway and Iceland have been unwilling to settle such disputes in the past. In 2006, the two sides – together with the Faroe Islands/Denmark came to an in-

17 The Independence Party, the largest party in Iceland, and the much smaller Progressive Party initiated this cooperation as part of a government coalition policy in the winter and spring of 2006–2007. When the Social Democratic Alliance replaced the Progressive Party as the coalition partner of the Independence Party following the parliamentary elections in May 2007, it reaffirmed its support for this policy.

18 See, for example, Ögmundur Jónasson, „Mislukkuð Samfylking“ [The Failure of the Social Democratic Alliance], *Morgunblaðið*, 1 September 2007.

19 See, for example, Steinþór Ólafsson: „Innrás Noregs í Ísland“ [Norway's Invasion of Iceland], *Morgunblaðið*, 29 December 2006.

20 Árni Þór Sigurðsson: „Sjálfstæð utanríkisstefna“ [An Independent Foreign Policy], *Fréttablaðið*, 29 April 2007; Daniel Sigurðsson, “Norwegian Expansionism”, *Morgunblaðið*, 1 December 2006.

terim agreement on the northern continental shelf boundaries beyond 200 miles as part of their efforts to influence the recommendation of the UN Commission on Limits of the Continental Shelf. And by 1980, Norway and Iceland had already resolved the boundaries issue of Jan Mayen and set up a joint fisheries commission. Yet Iceland has vocally rejected Norway's unilateral assumption of a 200-mile Fishery Protection Zone around Spitzbergen, arguing that the non-discriminatory rights to practice peaceful economic activities of the parties to the Spitzbergen Treaty apply.²¹ And the Icelandic government has not formally abandoned its preparations to proceed against Norway before the International Court because of its unilateral interference with herring fisheries in the waters surrounding Spitzbergen.²²

Thus, future disputes over the exploitation of natural resources could spill over into the security relationship and disturb it. But for the moment, the convergence of security interests in the North Atlantic – the will to highlight the geopolitical importance of the High North within and outside NATO and to address maritime security, commercial interests, and environmental protection – easily outweighs the irritants in Icelandic-Norwegian relations.

CLIMATE CHANGE AND ARCTIC GEOPOLITICS

In Iceland, increasing attention is now being given to future scenarios in the High North, the Arctic sea-ice vanishing and the opening of a circular polar route. In the early twentieth century, the explorer Vilhjálmur Stefánsson coined the term “Arctic Mediterranean” to describe the sea links between the Atlantic and Pacific Oceans.²³ This phrase has admittedly become a cliché. But Stefánsson's early twentieth century vision of all-year commercial sea routes around the Arctic – with ports, naval stations, and weather stations on strategically placed islands – is now being reformulated, reproduced and repackaged in the early twenty-first century. For one thing, it has been pointed out that as a result of climate change, Iceland could become a hub for transarctic trade – a commercial center for the reception, distribution and transshipment of goods. After all, the shortest route between the North Atlantic and North Pacific oceans is a crossing over the North Pole between the Bering and Fram Straits (between Greenland and Spitzbergen). If readily navigable, this route would shorten transport distances between Far Eastern and European ports by 40 per cent. It could become economically attractive as an alternative to global maritime trade routes that

21 Lárus Jónsson, „Hafréttarmál: Deilur Íslendinga og Noðrmanna um ‘Smuguveiðar’ og fiskverndunarsvæði Norðmanna við Svalbarða“ [Law of the Sea: Icelandic-Norwegian disputes over the Loophole and the Norwegian Fishery Protection Zone around Spitzbergen], *Stjórnmal og stjórnsýsla*, vol. 2, no. 2 (2006): 46–50.

22 See the comments by Prime Minister, Geir Haarde, in *Morgunblaðið*, 6 April 2006

23 Carina Keskitalo: “International Region-Building: Development of the Arctic as an International Region,” *Cooperation and Conflict*, vol. 42, no. 2 (2007): 187, 200–201.

utilize the Suez and Panama canals. While transarctic shipping will not replace present transportation routes, it is bound to supplement them by providing more capacity for increased transportation volume.²⁴

A more pressing contemporary question for Iceland, however, relates to the rapidly expanding volume of energy shipments from Russia and Norway to the United States through the Icelandic Economic Zone. This development is an addition to the increase in the traffic of cargo vessels in Icelandic waters due to new aluminum smelter operations in Iceland. In 2006, the number of tankers transiting was about 225 vessels. Soon many LNG tankers with natural gas from Norway's Snow White field will transit through Icelandic waters to the United States. In 2015, the expected transit of oil through the area will be around 50 million tons and include up to 500 passages of fully loaded tankers per year.²⁵

This transportation is likely to set the stage in Iceland for a polarizing debate between those who stress the potential economic benefits and those who point to the environmental drawbacks. So far only limited public discussion about this issue has taken place. The prospects of Iceland becoming a center for energy transshipments, possibly with oil and gas refineries, may renew Iceland's strategic importance and boost its economy. Yet, such ideas conflict with Icelandic purist self-conceptions as a natural haven and devalue it as a tourist destination. Indeed, the opposition to the construction of aluminum smelter factories in Iceland is a tell-tell sign that there may be a domestic saturation point with respect to energy-intensive industries. If other types of polluting activities – involving oil and gas – are added to this mix, this will likely generate resistance. The recently revived idea of constructing a Russian-financed oil refinery in the western part of Iceland has, for example, been met with a decidedly mixed response, even though there is little disagreement over the need to revive the region's declining economy.²⁶

Icelanders are, of course, no environmental saints. Like other nations, they are constantly trying to balance economic interests with environmental concerns. Nonetheless, the question of environmental safety in Northern waters is bound to be a major issue in the near future. Both Norway and Iceland are beginning to address environmental risks, having, among other things, signed an agreement on a mutual automatic identification system data exchange and on other types of safe sea net collaboration. Denmark is also monitoring ship traffic around Greenland and has set its sights on the strait between Greenland

24 Opening address by Valgerður Sverrisdóttir, Minister for Foreign Affairs, in a report, "Breaking the Ice: Arctic Development and Maritime Transportation. Prospects of the Transarctic Route – Impact and Opportunities", 27–28 March 2008, p. 5.

25 Ibid., p. 15.

26 See, for example, the debate in *Morgunblaðið*, 18 April, 23 May, 10 June, 16 August, 8 September 2007.

and Iceland. Yet, there is an urgent need to do more, to undertake risk analyses and develop strategies to deal with the hazards and insecurities involved here. The growth in oil and gas transportation in the North requires a coordinated regional effort to ensure safety. In addition, while terrorism or piracy against shipping is not a current threat in this area, such risks will increase in the future if trade and shipping patterns undergo fundamental changes.

Averting and managing risks usually includes the reorganization of power and authority. This raises the question of who is to be responsible and financially accountable for energy and maritime security in this area. The Norwegian government has, apart from promoting bilateral security cooperation, been pushing for a NATO role. The proposal has received a rather cool response from some NATO members because it has been seen as too self-interested.²⁷ The Norwegians have argued that NATO's activities cannot indefinitely be limited to out-of-area missions such as the one in Afghanistan. To maintain its credibility in Europe, the Alliance will have to pay attention to security issues on its home turf. The Icelandic government has fully supported the idea of expanding NATO's mission to include energy security and of paying more attention to what Prime Minister Geir Haarde has termed the Alliance's backyard. The government has, however, made it clear that it does not want to weaken its support for NATO's current order of priorities, especially the mission in Afghanistan.²⁸ The recent NATO decision to provide Iceland with a scaled-down version of air policing, compared to that in the Baltic states and Slovenia, has been welcomed by the government, even though it is limited in scope and does not involve any permanent military presence of NATO member states. The most surprising element is the willingness of the French to play a considerable role (it will be the first NATO member to send fighter jets to Iceland for several weeks in 2008), for they have historically not shown much interest in this area.

Perhaps a Northern grouping in NATO – encompassing those states who have interests in the region – will give the Alliance a bigger profile in the North Atlantic along the lines of its Mediterranean Dialogue. The NATO-Russia Council could also serve as an extended forum for discussions of energy and maritime security in the area. In any case, it is not enough just to put the issues of the High North on the agenda; the question of closer regional coordination and the implementation of maritime security has to be addressed far more systematically.

27 Interviews with NATO officials, 15 January and 4 September 2007.

28 An Address by Prime Minister Geir Haarde on the occasion of the visit of NATO's Military Committee, 2 April 2007, <http://forsaetisraduneyt.is/radherra/raedurGHH/nr./2582>.

CONCLUSION

Iceland is poised to gain more geostrategic importance as a result of climate change, increasing energy transport, and new state-run and commercial activities in the North. It is, of course, far too early to define Iceland's exact role in future transatlantic and transarctic trade. While some powers see the exploitation of the natural resources of the Arctic as a positive, utopian venture, others are more likely to view these changes in negative, even dystopian, terms. Iceland will be torn between the potential benefits offered by oil and gas exploitation and transport, and the detrimental impact. That there will be domestic conflicts over future compromises in this area is certain.

Transnational issues will also become more important because the only way to deal with the future developments in the High North – in the field of energy and maritime security – is through regional and transregional cooperation. Since the Arctic and Barents Sea will soon supply a significant share of the world's future energy needs, this will have much bearing on security concerns in the region. Instead of being a key military outpost for the United States – as was the case during the Cold War – Iceland could, ironically, become tied to U.S. energy security due to oil and gas transport from Russia and Norway. Whether this leads to a future request for a renewed military presence in Iceland remains to be seen. Far less certain is whether the historian Geir Lundestad's *Empire by Invitation* thesis²⁹ will be given a new lease of life – that is, whether the United States will be welcomed back to Iceland.

When politicians highlight the potential impact of future economic developments in the High North, they usually speak of “opportunities” and “challenges.” A more fitting description would be “opportunities” and “risks.” Ecological problems ignore the borders of nations and regions. The Arctic question – when stripped of its romanticism and geopolitical gamesmanship – is not only about the exploitation of natural resources but also about the management of risk.

29 See, Geir Lundestad, “Empire by Invitation? The United States and Western Europe, 1945-1952”, in Charles Maier (ed.), *The Cold War in Europe: Era of a Divided Continent* (New York: Markus Wiener, Publishers, 1991), pp. 143–165.

Part IV

Military implications

NEW PERSPECTIVES ON MILITARY POWER IN THE ARCTIC

by General Sverre Diesen, Norwegian Chief of Defence

INTRODUCTION

I shall take as my point of departure the strategic parameters of the Northern Region of today, look at where they differ from those of the Cold War, and then try to deduce from that what constraints and possibilities – if any – today’s circumstances offer for the application of military force in support of political objectives. What I am trying to do, in other words, is to develop an idea of the space – in terms of force levels and types of operation – within which military force could be applied in our part of the world today, without actually violating its political purpose. Since we all seem to agree that there is a role for the military as far as the tasks at the very bottom of the conflict spectrum are concerned – such as maintaining situational awareness and looking after national sovereignty – I would like to go into the as yet unexplored question of whether there is still a role beyond that: is open military conflict possible in the Arctic region in our time, and if so – what would it be like? Is there a margin for the more traditional use of force at all, given at least a minimum of Clausewitzian logic and proportion between political ends and military means? Finally, having tried to answer that, I shall try to derive from this what consequences it should have for force design and force posture, particularly for a small country like my own.

THE STRATEGIC PARAMETERS OF YESTERDAY

During the 1990s, when NATO started to adjust to the confrontations of the post Cold War era, Norway in many ways resisted the urge to reform its military – essentially because this would have implied casting off the long-standing tradition of a militia-type of mobilization force. The excuse for clinging to the military institutions of the past comprised pointing to a still unstable Russia and saying “the Soviet Union may still come back” – not because we particularly believed it ourselves, but because we were resisting the idea of dramatic change, fearing that the traditional mobilization force was the only type of military acceptable to Norwegian society.

So, when we start beating the drum again about the Northern Region, I am at great pains to emphasize that this is not a renewed attempt to flog a dead Soviet horse, to make it do one more lap around the circuit for the benefit of any Cold War warriors that might still be around. We can see the geopolitical challenges and their military strategic implications today as being fundamentally different from those of the Cold War period. It is certainly not the old threat, only with a lower probability – nor is it a scaled-down version of the same threat with the same probability. The old challenge was inextricably linked to the possibility of a nuclear exchange across the polar region, and the naval campaign to contain the Soviet Northern Fleet before it could erupt into the North Atlantic and sever the SLOCs between North America and Europe in an all-out European war.

The new military challenge is radically different, first of all because today's armed forces serve fundamentally different political interests and ambitions, and consequently – in accordance with Clausewitz's most famous dictum – the application of military force in the Arctic today, to be consistent with its political justification, would have to be different in kind from that for which we were prepared during the Cold War. The fundamental difference is that today we see no threat, in the conventional military meaning of the word. Thus, what we are talking about here is a number of strategic factors that under certain circumstances could develop in a way which might be said to constitute certain risks.

THE NEW STRATEGIC PARAMETERS OF THE NORTHERN REGION

What, then, are the new strategic parameters of the Arctic, and what are their implied consequences in terms of the potential for military conflict? The parameters themselves are obviously reflected in the different themes of the four sessions of this seminar: energy, food, jurisdiction and transportation.

To clarify, we are dealing with the security implications of scarce – and hence strategic – resources, either directly or indirectly. Directly in the sense that energy resources as well as food supplies of significant importance are acquired in this region – indirectly in the sense that global warming is opening up new sea lines of communication through the Northwestern and Northeastern Passages respectively, through which these and other goods may be transported in the future. In addition to these new realities, there is of course still a residual military side to the equation, since the region is also home to the submarine-based nuclear deterrent of a great power and its associated conventional capabilities.

Even though all these factors are obviously security-related, they are also very different from the strategic parameters of the Cold War period, and consequently also different in terms of their potential for military conflict. By 'potential for conflict' in this context, I mean both the probability of these new parameters leading to military confrontation and – if a conflict does happen – how

its political origin will influence the scope and pattern of the use of force. What we need to do, therefore, is try to find a formula that translates or transforms the political requirements into military means consistent with and conducive to these policies.

A PARADIGM FOR THE APPLICATION OF LIMITED FORCE

The first aspect we should consider to arrive at a rational answer to this is the military paradigm in which we operate. To explain that, I will refer to General Sir Rupert Smith's trendsetting book *The Utility of Force*, which differentiates between industrial or total war, or "war *between* the peoples" – i.e. the sort of major conflict associated with the twentieth century, primarily the two World Wars and the potential third – and "war *amongst* the people", i.e. the counterinsurgencies and counterrevolutionary wars of the late twentieth and early twenty-first century.

Sir Rupert, along with several other military historians and analysts, has pointed out that inter-state, industrial war between developed nations has been relegated to the scrapheap of history, because of its utter lack of political usefulness, and has been replaced by small intra-state wars and campaigns not unlike those experienced by Britain and other European colonial powers during the retreat from empire during the second half of the twentieth century. This, to my mind, is an excellent analysis, and one which many conservatively inclined defence analysts in this country would be well advised to study.

That being said, however, what is interesting about the sort of conflict under consideration here is that it fits neither category. Although one can envisage a non-state actor – for example a sophisticated terrorist organization – as one of the parties in a scenario in the Arctic, the question before us is really whether a military conflict stemming from a clash of interests and wills between two or more states could still happen. If so, this would obviously feature regular, conventional forces, as opposed to the guerrilla-type of insurgency force of the 'war amongst the people', which will substitute technological sophistication with endurance and strength of will. On the other hand, since it would be a conflict of limited political issues – at least in terms of their significance for national survival – the use of force would have to be similarly constrained. In other words, the application of force would have to be limited in terms of time, space and force levels so as not to separate itself from its political origin.

If we accept that this rules out a campaign of territorial conquest and expansion, we are left first of all with the task of deciding – within the framework of these strategic parameters – if it is possible to find rational political objectives in support of which force could possibly be applied. Having established that such a margin is actually there, we would then have to derive from the political objectives what the military objectives of such a venture could be, and from

that the ways and means of a campaign designed to achieve these objectives. The starting point, therefore, must be the assumption that a confrontation in the Arctic in all probability would somehow be about the right to collect and exploit the riches in international waters and on the seabed of the polar region, be they energy or food resources – or about the command of the SLOCs to and from this region.

That means ruling out the use of force to expand into the land territory of other countries, since that would lead to the sort of major war we have discarded as being disproportionate to its political purpose. Instead, I will go back to Rupert Smith's very useful analytical tool of confrontation and conflict – i.e. assuming that there is a permanent state of competition for strategic resources in and access to the region which can be seen as a confrontation with an at least theoretical possibility of spilling over into conflict.

THE NORMAL CONDITION – STABILITY AND STRATEGIC COMPETITION

The normal or baseline condition in such a strategic environment would be one of sustained military presence – more as a visible expression of national interests and claims than as a traditional military deterrent – and on this we all seem to agree. That being said, the credibility – and hence the political effect – of any military force anywhere ultimately lies with the will and ability to use it, if the political interests they are there to support were put to the test. It follows, therefore – to digress for a moment – that “military presence” in the form of training camps for recruits or redundant military bases do not represent any additional political value in this context, although they may have other merits.

To conclude about what would be the normal situation – that of a strategic but peaceful competition with but a limited scope for escalation to conflict – all powers with a stake will be best served by maintaining a certain military presence in the region. This would be in keeping with a long-standing role of military forces as a political messenger – sending a signal about a nation's interests and ambitions in a given area. Here we have a common interest in maintaining a sensible balance between on the one hand the sort of low-key but sustained military presence which is both a condition for and a token of stability, and any excessive militarization of the region on the other.

However, there is a caveat here, and I think we should be very clear about the difference between state agencies employed specifically for resource jurisdiction and conventional military forces. Coast guards, border guards and similar organizations and agencies operate within a different political, strategic and judicial framework than military forces, which means that there is no credible – or for that matter desirable – link between using a coast guard vessel and deploying a frigate to exercise resource jurisdiction, should the coast guard vessel prove insufficient. This will only serve to lower the threshold of legitimate in-

tervention by military forces and would consequently play into the hands of the militarily stronger power – instead of referring the matter to be brokered in the proper international bodies and organizations. That is hardly a clever strategy – at least not for a small country. Conventional military forces should therefore be used with extreme caution or preferably not at all for resource management and jurisdictional purposes.

ESCALATION – FROM CONFRONTATION TO CONFLICT, OR THE LIMITS OF FORCE

Turning now to the at least theoretical possibility of a competition or confrontation over scarce strategic resources escalating to conflict, what would be the characteristics of such use of force and what might this lead to? I would like to emphasize at this point that I am not speculating about the actual *probability* of such a contingency, but am sticking to the question of what it would be like and what the consequences would be *if it happened*. And I would be the first to admit that – fortunately – this looks like pure theory at the moment. But that is precisely why we should consider it – because understanding why and how it could happen will in itself contribute to keeping it just that – a theoretical possibility.

First of all, I think we need to remind ourselves of what I have already briefly touched upon - that the resources we are dealing with here, although important, are not critical to the survival of our nations and peoples. Both energy and food are available from other sources and regions. It follows from this that a confrontation escalating to conflict would be limited and essentially about economic interests. The political objective, therefore, would not be comparable to the objectives of a total war – such as the acquisition of new provinces or the spreading of religious and political beliefs – but rather about forcing a change in the policies of another state or compliance with specific demands.

That, in its turn, implies that the use of force – as already pointed out – in all probability would have to be limited in terms of space, time and force levels, in order not to violate the limited nature of its political purpose. In concrete military terms, that means engagements which would probably not go beyond the tactical level – i.e. they would involve a limited number of planes, ships or army units, and would have to be terminated within a limited timeframe. By the same token, the air and maritime domains would be rather more suitable for this kind of military demonstration, since violating the land territory of another country is a politically rather more serious thing to do, and at the same time militarily far more irreversible – at least it takes longer time to reverse the situation, once you commit land forces to a military campaign. Indeed, the genius of air and sea power is precisely the fact that they operate in an international space, and by virtue of their speed and flexibility can deliver their effects and then withdraw quickly to de-escalate the situation. From that perspective, air

and sea engagements in international – as opposed to territorial – air space and waters are infinitely more probable than land operations of any significance in such a scenario.

To be specific, I would say that the upper limit of land operations in this political context would be an air- or sea-launched raid, possibly against an objective of military or economic value, but with extraction of the force as soon as the desired effect had been achieved – precisely because there would be a need to avoid the hugely and largely uncontrollable escalating effect of a land force – however small – remaining on foreign territory.

As for the more probable air and maritime operations one could possibly envisage – and I emphasize that I use the word “probable” in relative terms here – they would presumably also target military and economic objectives and infrastructure. But, again, this would have to be done with a view to restricting collateral damage in terms of casualties and negative environmental effects. The reason for this is simply that since the political cause and reason for resorting to force is of an economic and therefore limited nature, excessive damage and loss of life would automatically mean the loss of the moral high ground and with that the loss of political credibility and support from the international community. It would, in other words, be tantamount to paying a strategic price for a tactical gain, or rather for little or no gain at all.

This is quite simply because the real purpose of force application in a context like this does not lie with the amount of destruction it will produce as an end in itself, within the larger operational or theatre-level picture – but has as its reason to demonstrate that the government in question is willing and able to use force in the first place. It is in other words the use of force as an expression and a measure of political determination that is important, rather than the actual damage it causes.

I would also like to emphasize at this point that even if we cannot rule out the possibility of a conflict being triggered more by accident than by design, it does not follow from this that it will be pursued in an irrational manner, once it breaks out. There is no reason, in other words, to assume that total war might eventually happen as the end result of botched crisis management.

Thus we can see that an amount of force which must be described as purely tactical in military terms would take on a strategic role and significance in the larger political scheme of things. This insight – that the utility of military force in this region has been reduced to a level where military strategic objectives would be served by tactical level engagements – is in my opinion one of the most fundamental lessons we should take away from this analysis. Not, mind you, in the same way tactical engagements take on strategic importance in Afghanistan, with the conflict dragging on for years as a counterinsurgency campaign, but as

short, sharp and in essence punitive military actions, orchestrated in extremely close interaction with political initiatives and diplomacy.

IMPLICATIONS FOR DEFENCE POLICY AND FORCE DESIGN

What should be the consequences of this analysis for the design of our armed forces, and their posture, particularly for the small countries in the region which are still struggling to come to terms with the changes brought about by the end of the Cold War?

First of all we should recognize that the strategic situation – as well as economic trends – have put the relevance of large, untrained mobilization forces in grave doubt, as they have become neither useful nor affordable. With forces of lower readiness, the mobilization of reserves or the accelerated training of insufficiently trained units in a tense situation would probably be unavoidable. Since this could easily be either interpreted or construed as an escalation by the other side, it follows that it would be destabilizing and consequently undesirable.

The emphasis should therefore be on highly trained, standing forces capable of delivering the necessary and stabilizing military presence – while remaining able to react at short notice in support of political crisis management, and prevent episodes from gravitating towards a higher level of confrontation. Standing regular forces also have the merit – precisely because they are trained and ready at all times – to give our politicians the luxury of choice, either reacting immediately or waiting to avoid premature escalation if that is required.

The situation also influences the balance between the different services, compared to the situation during the Cold War. Since the threat then was essentially a large-scale invasion of national territory and a war for national survival, it followed that large land forces were pre-eminent, supported by the other services. Now, however, we regard the air and sea domain as being the more suitable for the application of politically relevant military force, hence the need for a shift in the balance in favour of maritime and air forces. That being said, certain minimal force levels in all three domains need to be maintained, as a matter of sustaining competency at a certain level – what we call the problem of critical mass.

Finally, all this must be achieved within the constraints of the budget and the ever-increasing cost of military capabilities. This, I would suggest, will force small and medium sized countries into the sort of defence cooperation scheme that we are about to launch with Sweden, with small and medium sized countries being forced to coordinate their defence and security efforts, and to a certain extent integrate their force structures. The concept of multinational, mutually reinforcing defence structures, I think, is one that will be increasingly discussed and implemented over the next decades, as the increase in costs in the defence sector keep eating into today's essentially national forces.

CONCLUSION

It is evident to the point of being glaringly obvious that the changes we see in the Arctic will have an impact on security affairs. Were it not so, it would after all be the first time in recorded history that the presence of scarce resources in a region, or the opening of new lines of communication through that region, had not affected strategic and security questions.

At the same time, I think we should be absolutely clear in our minds that the end of the Cold War marked a shift in the military paradigm, and that the concept of industrial war between developed countries is a thing of the past. A large-scale conventional conflict between countries with economic or other interests in the Arctic over these scarce resources would obviously be an exercise in political and economic futility, defeating its own purpose, since the cost of such a war would exceed any possible gains by at least one order of magnitude, if not several.

On the other hand, it would be unwise to leave the Arctic completely devoid of military presence, since a military vacuum can be misinterpreted as a lack of national interest and priority. The challenge, therefore, is to maintain a military presence that is sufficient to act as a stabilizing factor – but without confusing this with the sort of presence and posture we maintained as a deterrent against aggression during the Cold War.

In that regard, it is of particular importance that we distinguish between resource jurisdiction and conventional military presence, delineating their separate tasks and responsibilities to prevent two branches of state power that need to be separate from becoming a continuum. That, in a given situation could have the most disastrous effect on crisis management and prevention.

However, should military force be applied in support of political objectives in the Arctic, either deliberately or as a result of failed crisis management, we need to realize that this is not a case of a Cold War scenario trying to break its way out of the coffin. It would most likely be a very limited affair, with tactical military engagements being used to provide strategic leverage for certain political claims. Consequently, we should not let this become an excuse to revive the military structures and institutions of the past, but design our military forces to serve current and future strategic requirements and purposes.

CONTRIBUTORS

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Björn Bjarnason was appointed Minister of Justice and Ecclesiastical Affairs in May 2003. Prior to that, he read law (*cand. jur.*) at the University of Iceland, graduating in 1971. He was Editor at Almenna bókafélagið (a publisher's) from 1971 to 1974. He was Foreign News Editor at *Vísir* from February to October 1974. In addition, he was Division Chief at the Prime Minister's Office from October 1974, and Deputy Secretary General from September 1975 to October 1979. Between 1979 and 1984, he was a journalist at *Morgunblaðið*, and Assistant Editor from 1984–1991. He has been MP for Reykjavik since 1991 for the Independence Party (right of centre). He served as Minister of Education, Science and Culture from April 1995 until March 2002, and was elected to Reykjavik City Council in May 2002.

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fessor at the history department at the University of Oslo. He then served for two years as Head of Secretariat for the World Congress of Historical Sciences, before joining the Norwegian Institute for Defence Studies in 1997. In 2005–2006 he served as State Secretary (Deputy Foreign Minister) at the Norwegian Ministry of Foreign Affairs. He is head of the Government's Advisory Committee on Security and Disarmament. Skogrand has published extensively on Norwegian foreign and defence policy, NATO, disarmament, and contemporary history. His last major work is *Norsk forsvarshistorie*, bind 4, *Alliert i krig og fred, 1940–1970* [The History of Norwegian Defence, vol. 4, Allied in War and Peace, 1940–1970] (Bergen: Eide, 2004).

DEFENCE MINISTER ANNE-GRETE STRØM-ERICHSEN

Defence Minister Anne-Grete Strøm-Erichsen (Labour Party) was appointed Defence Minister on 17 October 2005. She is a computer engineer, and has twenty years private and public sector experience in computers and information technology in the fields of system development and management. She has held a series of political positions, and from 2003 she was Commissioner of the City of Bergen. From 1991 till 2005 she was a Member of Bergen City Council, and in the period 1991–2005 she was a Member of the Executive Board of the Bergen City Council. From 1997 to 1999 she was Leader of Hordaland Labour Party. She was Deputy Mayor in the City of Bergen from 1998 to 1999, and from 1999 to 2003 she was the Mayor/Chief Commissioner of Bergen. In 2001 she became a Member of the Labour Party Central Council.

SPECIAL ADVISER GEIR WESTGAARD

Geir Westgaard is Special Adviser to and head of the High North Project at the Norwegian Ministry of Foreign Affairs. He led the inter-agency process that produced the Norwegian government's strategy for the High North last December and is charged with policy development and coordination in this area. Mr Westgaard is a career Foreign Service Officer who has been posted to Moscow, Vilnius and Washington D.C. He has also served as Foreign Policy Adviser at the Norwegian Prime Minister's Office. Prior to taking up his current position, Mr Westgaard worked in the private sector for eight years, both as an oil industry executive and as a business consultant. He has been Vice President of Statoil ASA in charge of country risk analysis and social responsibility, and Vice President for strategy and communications at San Francisco-based Business for Social Responsibility. Geir Westgaard has a BA from the University of Oslo and a Master of International Affairs from the Columbia University. In 1997–1998 he was a Fellow at Harvard University's Weatherhead Center for International Affairs.

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